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A

PRACTICAL TREATISE
ON THE
DISEASES OF WOMEN.

ILLUSTRATED BY

Colored Plates and Numerous Wood Engravings.

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CINCINNATI; FORMERLY PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND
CHILDREN IN THE SAME; AUTHOR OF THE ECLECTIC PRACTICE OF
MEDICINE, ECLECTIC MATERIA MEDICA, ETC.

WITH A PAPER

ON THE DISEASES OF THE BREASTS, BY ROBERT S. NEWTON, M. D.,
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Fourteenth Edition, Thoroughly Revised.

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P R E F A C E.

IN commencing the practice of Medicine my attention was especially drawn to the study of those diseases peculiar to women—diseases of the uterus and its appendages, from the proportionally large number of cases of these disorders in which I was consulted. It was evident that my success in general practice depended, in a great degree, upon the success of my practice in these special forms of disease, and yet, in the literature of the Eclectic branch of the profession, I could find nothing that could be considered a sufficient guide to the young practitioner. It is true that we have a mass of information scattered through the pages of our medical journals, and it is equally true, and can not be disputed, that the Eclectic practice is far more successful in these diseases than the Allopathic or old-school practice; yet this information required to be collected and arranged before it could be available for the student or general practitioner. I also found that in those articles which have been published on this subject, that the pathology of these morbid processes was scarcely referred to—all that was given being the arbitrary name of the disease, the general symptoms, and the treatment, which, though successful, was not founded upon the pathological character of the diseased action.

On examination of the numerous Allopathic works on this subject, I found that the pathology of uterine disease had been carefully and successfully studied, and that, in this respect, this branch of medical science was at least equal, if not in advance of the general practice of medicine: and yet, with this accurate knowledge of the nature and character of the diseased actions, their treatment was far less successful than our own, so far as medicinal agents were used for the cure, but where operative interference was required, nothing more could be desired than was given in these works.

From this investigation, commenced for my own benefit, the present work has grown. For the description and pathological character of the diseases described in the following pages, I am principally indebted to old-school authorities; but the practice is strictly Eclectic, every measure recommended having been fully tested by myself or by our most successful Eclectic practitioners.

P R E F A C E T O T H E E I G H T H E D I T I O N .

For twenty years this work has been before the profession, and the fact that it has passed through seven editions is its best recommendation to new readers. In some respects it urged a departure from the ordinary practice, especially in displacements of the uterus, wholly discarding pessaries. Time has proven the truth of these views, and a large number of the best physicians have adopted them.

This edition has been thoroughly revised, especially in the treatment of disease and use of remedies. All the new means are described, and the indications for the selection of individual remedies pointed out. In the future we will depend more and more upon general treatment, and the direct action of remedies, and will find in consequence that the practice will be pleasanter both to physician and patient, and more successful.

CINCINNATI, October 10th, 1877.

P R E F A C E T O T H E F O U R T E E N T H E D I T I O N .

In re-reading this work I find but few changes necessary. As time passes the truth of "specific medication" is more clearly established, and the selection of remedies in diseases of women is shown to be based upon the same principles as in ordinary diseases. Given, the indications for a remedy, and its action is as certain here as elsewhere. Conversely, if medicines are not so selected, the action will be as uncertain as in other cases.

CINCINNATI, October 10th, 1886.

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INTRODUCTION.

The first questions that require study are, why is disease of the reproductive organs of women so common, and why are they so difficult of cure? I answer the first by saying that they are common because the reproductive organs are not properly cared for, and are subject to continuous abuse. They are difficult of cure for the same reasons, and because the physician will not see the necessity of rest and a restorative treatment. The reader may think these claims are broad, but we hope to be able to substantiate them, and in doing so, point out the way for a better treatment.

The law of development reads, "as a part is rightly used, it gets increased development and strength." The reproductive apparatus is intimately associated in its development with the condition of the lower portion of the body—with the apparatus of locomotion. Show me the woman who has well developed legs, and the capacity for active and continued movement, and I will show you one who has a well developed and strong reproductive apparatus. If this is the fact, we see the importance of active out-door exercise in girlhood—leg exercise; and the importance of well regulated exercise in the adult. If a feeble woman is about to enter the married state, and call into use this apparatus, there is especial reason why a well regulated exercise for pelvic development should be adopted. If, now, exercise in the open air is commenced, and gradually increased from day to day, we will find a most marked improvement in the tone of the pelvic structures in the course of a few months.

Inattention to the bowels and bladder is a very common cause of uterine disease. The girl or woman has so much occupation, or knows so little of the importance of these functions, that she neglects them, becomes irregular, and must suffer physical lesions of the pelvic viscera in consequence. No woman who neglects

these important functions can have perfect health, and very many will grow some disease in this way.

Want of rest, and exposure during the menstrual period, is a frequent source of disease, and it is well to impress upon the minds of our women the need of care at these times. Not but that a woman who had inherited a vigorous body, and had lived an active, healthy life, might not endure very great exposure without suffering,

Congenital hydrophobia is a very common cause of uterine disease. Some women never wash—anything but their faces—and have to be taught that in civilized life cold water may compensate for sedentary habits. The woman of lax fibre and feeble development will find the vigorous application to the pelvis, abdomen, and genitalia, of cold water, with brisk friction in drying, a most important means of development.

I am free to say, that no woman has a right to enter the marital relation, unless she can perform the duties appertaining to it. If the body is feeble, or lacks development, her duty to herself, her husband, her children, and to society, demands that she employ all means to recover physical and sexual health. I leave it to the reader to say, from his experience, if these are not facts; if they are, the physician's duty in the premises is very clear—educate the people to right views of life.

With the use of the reproductive apparatus comes abuse, and from this many cases of uterine disease are grown. In early married life comes too frequent copulation, and excessive excitement of the reproductive apparatus, sometimes without the relief that comes from the completed venereal orgasm. Then pregnancy follows without a knowledge of the care that should be used in this condition, and frequently a too early return to the exhausting labors of the household after childbirth. Then possibly exhaustive and prolonged lactation comes in to complete the wrong to the previously exhausted reproductive apparatus. In many cases the cares of life are so great as to exhaust the vital forces; in other cases the labor in the care of the household is exhaustive, and in others the food is so imperfectly prepared that the woman can not make blood enough to sustain healthy life.

In thus naming the common causes of the diseases we meet in women, the physician may see how they can be avoided, and he

certainly will see the necessity of rectifying these wrongs, if he is to have success in the use of remedies. It not only suggests the good that may come from popular education in these matters, to prevent female diseases, but the necessity of avoiding them, if permanent cures are to be effected.

If we think for a moment of the acute diseases of women, we will see that they do not differ materially from diseases of the other sex, and if we select remedies according to *special* expressions of disease (general principles?), we have excellent success. As with other organs or parts, we find there are remedies which have a special action upon the uterus and ovaries, and this class is frequently brought into requisition. But it will not do to forget, in using them, the large classes that influence the appetite, digestion, blood-making, the circulation of the blood, the nutrition of tissue, its waste, and its excretion, with the general and local temperature and innervation.

If, for instance, I am called to treat a case of acute ovaritis or metritis, what remedies shall I employ? Adopting the physiological plan, I will select the proper sedative, the proper bath, the local application, means to establish secretion from the skin, kidneys and bowels, and to give right innervation. What more will I do? If there is or has been a wrong of the menstrual function, I use the special remedy indicated *after* the treatment first named. Or if there has been, or is, or will be, abuse of the reproductive function, I give the advice necessary. Have I to do very much more than if it was a case of inflammation of the lungs?

Let us have an example in a recent case. Mrs. H. has recently returned from a long journey, and the fatigue, and the frequent change of temperature in the ears, produced irritation and determination of blood to the pelvic viscera, increased by its being about the time of the menstrual period. The discharge made its appearance for a few hours, and then ceased, followed by high fever and evidence of inflammatory action. Pulse 120, full; temperature 105; tongue somewhat full, and covered with a yellowish fur; severe pain in the pelvic region, and exquisite tenderness on pressure. There was much irritation of the nervous system, and a scanty urine passed with difficulty.

Prescribed—R. Tinet. Veratrum, gtt. x; Tinet. Gelseminum, gtt. xx; water, 3iv; a teaspoonful every hour. Bowels moved with

an enema of tepid water. The next morning there was a decided improvement, and substituted—R Tinct. Veratrum, gtt. v.; Tinct. Macrotys, gtt. x.; water, $\frac{3}{4}$ iv.; a teaspoonful every hour. Pretty comfortable the next day; pain gone, but little tenderness; complained of some dullness and unpleasant sensations in the ears. Continued the medicine every three hours, and ordered a single grain of quinine at 10 A. M. The menstrual discharge came on that night, and convalescence was rapid and good.

I give this case to show the similarity of the treatment to that of other diseases. But one special remedy was employed, Macrotys, and even that would have been quite as useful in an inflammation of the lungs, if there had been the same tensive, wave-like pain.

Now let us have two cases, male and female, as an example. Miss T. follows the occupation for which Solomon was so famous, ("But King Solomon loved many strange women,") and suffered severely at times with ovarian neuralgia, and slight inflammation. I had treated her several times, but the influence of medicine was not satisfactory. Finally I was called when, with the ovarian trouble, was a sore throat with the peculiar aching indicating Phytolacca. I prescribed it in the usual dose—R Tinct. Phytolacca, gtt. x.; water, $\frac{3}{4}$ iv.; a teaspoonful every two hours. The result—she was wholly free from pain in twelve hours. It has been repeated once since with the same result. S. R. has neuralgia of the testes from the same cause, which has troubled him for months. The scrotum is pendulous, the testes full, and tender on pressure, and the dragging pain is sometimes almost insupportable. Prescribed—R Tinct. Phytolacca, gtt. x.; water, $\frac{3}{4}$ iv.; a teaspoonful every three hours; no support. There was speedy relief, and no recurrence of the trouble after taking the second bottle. I have an object in giving these cases, that will appear further along, but the reader can draw his own conclusions now.

I think the majority will agree with me that a *right* treatment of acute diseases of the reproductive organs of a woman must be based upon *right* general principles, and that it should be such a treatment as would cure a similar disease of any other part, plus the remedy or remedies that exert a special influence upon these tissues. Agreeing upon this, can we not agree that a *right* treatment of chronic diseases of the reproductive organs of women

should be such a treatment as would cure a similar disease of any other part, plus the remedies that influence specially these tissues, or this function? This conceded and we are then able to do our thinking in straight lines.

In the cure of a chronic disease, functional or structural, what is the first condition? To get as good a condition of the general health as possible. What is the second condition? To give the organ or part rest. Let us apply this to the cases in hand. The woman requires the common conditions of healthy life, sunlight, good air, good food, and reasonable exercise. In order to have good tissue and a healthy body, she needs good digestion and blood-making, a good circulation, tissues called into use, good waste, excretion, temperature, and innervation. Will any special remedy compensate for these? Is the local use of the speculum, and the instrument bag and medicine chest of the gynaecologist, compensation?

Let us think for a moment of rest as a means of cure. Recall the cases of uterine disease that have come under your notice, and see in how many of these exhaustive household labor has been a prominent cause; in how many too rapid childbearing has been a cause; in how many prolonged lactation has been a cause; in how many mental troubles and *worry* has been a cause; and in how many marital excesses (not the fault of the woman) has been a cause. When I have taken these cases out, I find but few left. It is true that many girls are not properly raised, and have not a right development for the mothers of families, but these give but few cases, if the abuses named above are not added. These are not only causes producing the common diseases of women, but they are present causes continuing disease.

One of the first lessons we learn in the practice of medicine is, that present causes of disease must be removed. In the treatment of chronic disease this is essential, and we do not expect success unless we look closely to this. Now let us reason together. If a woman suffering from uterine disease is overburdened with household cares, what needs be done to insure a cure? If a woman is bearing children so rapidly as to exhaust her life, what needs be done to insure a return to health? If a woman's life is exhausted by lactation, what needs be done? If a woman's life is exhausted

and the reproductive organs diseased by marital abuse, what needs be done?

We want a clear and intelligible understanding of these matters at the commencement, and I claim that no one can have success who fails to regard them. I will not concede that it is impossible to correct these wrongs of life in the larger number of cases, even among the poor, or the hard worked women on the farms of the frontiers. If the physician makes the suggestions in a kindly manner, and gives a sufficient reason for the proposed changes in the methods of life, means will be found to accomplish the object.

Standing next to good food well prepared, we rank water as a curative agent. As a means for retaining health, it can not be overestimated. As a rule, the woman who habitually uses a sponge bath of cold water to the pelvic region will remain healthy. I have had occasion to recommend it in several cases to pregnant women, as a means of avoiding the many unpleasant symptoms they suffered from during the last months of gestation, and after childbirth, and it has proven so uniformly satisfactory, that it has been continued afterward. There is no mistake but that the use of cold water, followed by brisk friction in drying, increases the strength of the circulation, the innervation and the nutrition of parts. Among the advantages following the use of cold water is the less liability to take *cold*. Let it be recollected that the feeble part always suffers in the wrong of the circulation we call "cold." If we have an enlarged or ulcerated cervix, a leucorrhœa, or a displacement of the uterus, it grows worse at every exposure or change of temperature, and we lose as much at these times as we have gained between them. Let me report a case as an example of the use of cold water.

Mrs. M—— is a chronic sufferer from uterine disease, and has been the rounds of gynæcologists, but without permanent benefit. Her back is so weak and painful that she is not able to take exercise. Examination shows an enlarged uterus, cervix full and doughy, os open, and abundant cervical discharge, a large ulcer of the os extending to the cervical canal, with prolapsus to the extent that at the menstrual periods the os would come to the vulva. At the menstrual period there was marked congestion of the pelvic viscera, relieved after a time by profuse menstruation. The treatment was commenced with the cold water sponge bath, the patient

lying between blankets, which were used to dry the surface. It would be applied briskly to the spine its entire length, then thoroughly dried by friction through the blanket; then the water would be applied to the abdomen, with the same thorough rubbing; then to the perineum and vulva, and then to the hips and upper part of the thighs. She was instructed to keep the vagina and vulva free from the discharges by washing in water. A perineal supporter was employed to sustain the pelvic organs when on her feet, and moderate exercise was taken daily in the open air. There was a decided improvement, and with change of scene, and pleasant company, there was an entire restoration of the health. No medicines were used, and a case of some eight years' standing was cured with cold water, brisk frictions, and the perineal supporter.

Let me call attention to the well adjusted abdominal bandage and perineal supporter as a means for giving rest to the debilitated tissues closing the outlet of the pelvis. Rest is absolutely essential to success, and yet if these tissues are forced to support the organs, they are overworked every day. This temporary support gives rest until by increased nutrition we have grown tissues strong enough to give support.

Let me call attention to the advantage of passive movements in the treatment of all affections that show debility and relaxation of tissues. For twenty years I have employed the Swedish movement cure in these cases, and with most flattering results. The treatment is usually a combination of means to give rest, *i. e.*, to lessen household labor on the feet, and the perineal supporter to support the structures, and passive movement to stimulate a better innervation and circulation. The employment of electricity takes the place of this "movement cure," and when judiciously employed gives most satisfactory results.

Let us see what we have thus far. Good food, well prepared. Fresh air and sunshine. Moderate exercise, that is not work. Relief from care, worry, and exhaustive labor. The stimulus of cold, the cleanliness of water, and the invigoration of frictions. Cold water as a means of preventing colds. Rest by proper outside support, and stimulus to nutrition by the "movement cure." Now add good clothing, freedom from exhaustive discharges, a right use of the reproductive apparatus, and we have the basis for a successful practice.

There is a general treatment for many of these cases that must not be neglected, but it is not one that can be formulated in a R. No "compound syrup," thank you. No "restorative bitters," if you please. No "uterine renovator," if our ears are level. If the tissues of the body are not well made, it will be necessary to make them over. How? you ask. By the methods named in Chambers' Renewal of Life. We see that the excretory organs are active, and the processes of retrograde metamorphosis go on well, that the old body may be carried out. Then we use such means as may be necessary to give good digestion, blood-making, a good circulation and innervation, that a new and better body may be built in its place. Here we have an *old* and diseased uterus, diseased because it is old, and disease irreparable unless we can get a better organ. You ask, how an "old uterus" in a young woman? Easy enough—a tissue has a life of about four months, and is continuously being born again. If the life of the tissue is prolonged beyond four months, and it is not reborn frequently enough, it becomes old. What shall we do? Stimulate the general processes of waste and nutrition, and renew the entire body to newness of life, uterus and all.

Again, my experience in the use of special remedies has proven to me that when special symptoms calling for a remedy are prominent, it will cure uterine as well as any other disease. Let me give a couple of examples from the last season.

Mrs. T. has suffered more or less since the birth of her last child, now over two years. She complains of bearing down, fullness in the pelvis, a weak back, has leucorrhœa, and her general health is impaired. A digital examination shows an enlarged uterus, cervix hypertrophied, tissues inelastic, organs low down in the pelvis. Her face is full, there is venous fullness, her tongue is full, inclined to be dirty; she has sense of dizziness in the head, pain in the ischiatic notches, and lumpy faeces, followed by thin faeces and mucus. All the indications for Podophyllin, and I prescribe—R Podophyllin, gr. j.; Phosphate of Hydrastis, gr. x.; make twenty pills. One to be taken at mid-afternoon. Exercise in the open air and good food. You would say that this was scant treatment, and yet she is sound and well, nothing else having been employed, and the prescription not renewed. You say it was the exercise in

the open air and good food that did it; so be it, cure your cases in the same way.

Mrs. W. has suffered for some months with the usual symptoms of uterine disease. Monthly periods irregular, discharge scanty and dark in color. Has been treated before with escharotics for disease of the cervix and ulceration, and does not want to go through the same process again. Examination determined a cervix slightly enlarged, tissue dense, and a peculiar velvety sensation at points—erosion; near the os a well defined ulcer.

The tongue showed the marked *violet color*, calling for nitric acid, which was prescribed. And without change of medicine she was relieved in a couple of weeks. Her health for the past three months has been better than for years.

The menstrual function plays an important part in the life of the woman from puberty to the “change of life,” at the age of forty to fifty years. It may be stated as a truism, that health of the reproductive organs is dependent upon a normal performance of the menstrual function. It is possible that there may be normal menstruation with considerable disease of these organs, but a wrong of the menstrual function is sooner or later followed by structural disease. So markedly is this the case that the establishment of normal menstruation is one of the essentials of successful treatment.

This brings us to the consideration of those remedies that influence the menstrual function. We may classify them as agents which promote the discharge, agents which diminish the discharge, and agents which rectify perversions of the discharge. If we were classifying the lesions of menstruation, we might group them in three classes—arrest, tardy in appearance, scanty—too free, too frequent in recurrence, prolonged in duration—painful, changed in character. Whatever remedies are recommended for either of these lesions, look to a right performance of function, and a single agent will sometimes relieve either of the three lesions.

Standing first in the list of these remedies is the *Macrotyls*, and for these uses we employ a tincture of the fresh or recently dried root, the dose being small, gtt. v. to gtt. xx. to four ounces of water, a teaspoonful every one, two, three, or four hours. It seems to have a direct action in restoring the menstrual discharge, if the arrest is associated with undue vascular or nervous excitement.

It exerts a special influence upon the tissues, looking towards the normal period, whether tardy or too frequent, but in the last case must be employed in very small doses. And it is one of the most important remedies we have for painful menstruation, or wrong of evolution or involution in pregnancy and after childbirth.

Having a somewhat similar action are the remedies *Caulophyllum*, and the two species of *Actaea*, *alba* and *rubra*. These remedies have a marked action upon the reproductive apparatus and function, but have not been so thoroughly studied as the *Macrotys*. I have used the *Caulophyllum* with marked advantage where there was congestion with a sense of fullness and weight in the pelvis, the wrong of the menstrual function being associated with hysteria.

Pulsatilla is one of my favorite remedies. It is par excellence the remedy for arrest of menstruation, for tardy menses, and for scanty menses, if there is simple derangement of function without local vascular or nervous excitement. General nervousness—the lesion of the mind—is a prominent indication. The *Pulsatilla* is also a prominent remedy for painful menstruation, if associated with the head symptoms, and like the preceding agents it looks towards healthy functional activity and healthy nutrition.

In the list of remedies favoring the menstrual discharge may be included Iron, not only as a blood-maker, or a general remedy, but for its local influence. Blueness of parts, usually with pallor, may be taken as the best indication for its specific action. Tissues are full, and frequently the lower segment of the uterus will give a doughy or sodden sensation to the finger. The tincture of muriate of iron—a specific in a certain variety of erysipelas—will be indicated by erysipeloid redness of the surface, frequently of the lower extremities, and of the external and even of the internal parts. One of the most marked indications for iron is constant pain in the posterior part of the head.

Apocynum is a very valuable remedy in the treatment of diseases of women. The indications are, fullness of abdomen, uterus enlarged, and tendency to œdema of the extremities.

Graphites may be employed when the monthly discharge is pale and watery, with prominent hysterical symptoms.

Polygonum when there is sensation of weight and fullness in the pelvis, with aching in the hips.

The Mitchella, Senecio, and Helonias, find a use here, but I am not able to point out the special indications for either.

Tincture of Phosphorus may be thought of as a remedy when there is want of innervation, and the reproductive function (venereal desire) is markedly impaired.

Iodine has a similar use, and is usually associated with Nux (compound iodine pill), to give energy to the reproductive organs.

When we think of the remedies for the conditions of too free, too frequent in recurrence, and prolonged, we wish to make a classification into those for *plus* vascular and nervous excitement—active condition; and *minus* vascular and nervous excitement—passive condition.

The remedies for the first will be found in the class sedative—Aconite, Veratrum, Lobelia, Bryonia, Rhus, Lycopus, Gelseminum, Asclepias—and we need not give them an individual study here.

The second group may be headed with Carbo-veg., which is one of our most certain remedies. The indications are, pallor, looseness of tissues, and a soft, open pulse. It not only regulates the menstrual discharge, as to quantity, frequency of recurrence, and duration, but it exerts a marked influence on the nutrition of these tissues. I use a trituration one to ten, and possibly it would be better in some cases to use a second trituration.

The Hamamelis is another very valuable remedy, and is indicated by fullness of pelvic tissues, laxity of perineum, and impairment of the venous circulation. These are the indications for the remedy, whether there is a wrong of the menstrual function or not.

Ergot may be employed when the tissues are full and relaxed, and when there is oppression of the nervous system, the patient being dull, stupid and careless.

Ipecac is a very valuable remedy when there is local irritability with lax tissues, though it may be employed in any case in which irritability of mucous membrane is a marked feature.

The pain or uneasiness associated with the menstrual discharge, and felt at other times, is very variable in character and intensity. There may be nothing characteristic about it, or it may point out the remedy for us.

Nux is the remedy we usually think of for uterine colic. Do not mistake the language—there is a uterine pain that simulates colic, even to its wandering character in the lower abdomen and pelvis.

The remedy not only relieves the pain, but greatly aids in establishing normal nutrition and functional activity. I saw a marked case in the early part of 1874, in which the woman had been a constant sufferer from uterine disease since 1867. The character of the pain was so decided that I gave her nothing but *Nux* at first, and as the results were so satisfactory no other remedy was employed, and she made a good recovery in three months.

We do not want to forget that the *Macrotys*, *Caulophyllum*, *Actaea* and *Pulsatilla*, are remedies for pain, and may be indicated by pain. As remarked at first, nearly all of these remedies look toward normal function, whatever may be the indication for their use.

The *Viburnum (Opulus) high cranberry, cramp bark*, is a most valuable uterine remedy, and not only looks to normal innervation, but to normal circulation and nutrition as well. It is indicated by pain—its common name, *cramp bark*, is very suggestive of the kind of pain—uterine spasm. The *Viburnum (Prunifolium), black haw*, exerts a very similar action, and is also indicated by pain—expulsive and intermittent. Both are remedies for abortion, and especially to remove the predisposition to it. The reader will recall cases in which there is a continued tendency to abortion, and will probably recollect that the ordinary treatment of uterine disease in such cases is very unsatisfactory. I think the experienced physician will be able to think of a condition of the reproductive organs, which, without any history of the case, would impress his mind as one favoring abortion. These are the cases for the two species of *Viburnum*.

Rhus is indicated by the usual symptoms, burning pain and heat, structures pinched.

Apis is a very fine remedy in some cases. Indications, burning with itching, especially of the bladder and urethra.

Collinsonia is sometimes a remedy, the indication being a sense of heat, rawness and contraction, usually about the anus or in the rectum (associated with hemorrhoids), or sometimes at the entrance of the vagina.

Cannabis Indica is a remedy for erethism of the reproductive organs, and venereal excitement.

Staphysagria is a remedy where there is fullness of tissue, abundant mucoid discharge, and dull brooding of the mind, with involuntary outbursts of passion.

A thorough analysis of disease is essential to success in treatment. We may have a series of cases of uterine disease, say ulceration of the cervix, no two of which will require the same treatment. Take for example a case in which an ulcer is the source of unrest, deranging the innervation and circulation of the uterus; causing profuse, prolonged, or painful menstruation; causing contraction of the abdominal muscles, and change in the position of the uterus and associate viscera; deranging the innervation of the stomach and intestinal canal, and the urinary apparatus; and possibly influencing the spinal cord and brain in an unpleasant manner. There is no doubt but in some cases an entire series of lesions have their origin thus, in a point of irritation that you might cover with a five cent piece. Let us treat this case with the stick Nitrate of Silver, cleanliness and *rest*, and as the local irritation is thus removed, we find that one after another the unpleasant sympathetic wrongs fade away, and finally with the healing up of the ulcer, the patient is wholly relieved.

Such results have been frequently obtained, and because the curative influence of the escharotic has been so marked in some, physicians have employed it in all cases. I need hardly say that the failure is complete in some, the condition of the patient is worse in others, and in still others there is but a palliative influence. It only proves, what has been so often stated in these pages, that we can not prescribe for names of disease, or adopt anybody's stereotype or recipe practice.

Take another of these cases, the ulcer presenting a very similar appearance, but the patient suffering from tensive contractile pain in the pelvis, and dysmenorrhœa, and the treatment might be wholly different. Now we prescribe for the patient, Macrotys, Pulsatilla, Viburnum, one or more, using simply washes for cleanliness, and giving rest to the reproductive function and apparatus, and our patient recovers without the unpleasant local application.

In another case, the menstrual flow recurs every two or three weeks, the period is prolonged, and the discharge too free. There may be hardly a pain or ache, the sensation being almost wholly of exhaustion. The patient's face is pallid, the tongue full and pallid, appetite poor. We prescribe Carbo-veg. to rectify the wrong of the menstrual period and check the flow, and Cuprum to rec-

tify wrongs of the sympathetic and as a blood-maker, and the patient makes a quick and good recovery.

In another, with seemingly similar lesion of the cervix, we find the uterus low in the pelvis, and the patient unable to take exercise on account of the dragging pain, backache, urinary irritation, and other unpleasant symptoms. In such case the use of a well adjusted perineal supporter, and the movement cure, will accomplish the desired object.

I have seen an intractable ulcer in the nursing woman get well promptly on weaning the child; just as I have seen a similar case cured by non-intercourse, sending the wife away to her friends for two or three months.

Here is your case of diseased cervix with ulceration, in which the patient's tissues look old and lifeless, and evidently both waste and nutrition are slow and imperfect. Evidently a sound uterus can not be made in this diseased body—what shall we do? The object is plain: we wish to establish active waste and excretion, and get rid of this old body, and by putting the digestive apparatus in good condition, and giving the patient the materials of good blood, get an improved nutrition, and build up a better body.

Going back a step, we will find our ulcerated cervix in sympathy with an irritable bladder and urethra; the ulcer may be the cause of this urinary irritation, or it may be the effect. I saw a case two years since, in which the uterine disease had resisted all the usual means, yet was cured with *Apis* and *Eryngium*. I have seen ulcers of the cervix associated with hemorrhoids, and promptly benefited by the treatment of these. Take the case of venous fullness and atony, with relaxed perineal tissues, full doughy cervix, and I would hardly think of treating the case without *Hamamelis*.

Supposing now this ulceration was the result of, and associated with that peculiar condition of the female organs that simulates a spermatorrhœa of the male, what would be a proper treatment? It is true, touching the ulcer with nitrate of silver might greatly relieve the nervous disturbance, in addition to giving local rest and an opportunity for restoration; but it is just as true that a right treatment for the reproductive lesion is necessary to effect a cure in other cases. There is a condition almost the opposite of this, atony of the reproductive organs, and loss of venereal appe-

tit, in which the stimulus of small doses of Nux and Iodine plays an important part in the case.

But it is quite clear that the one topical application, Nitrate of Silver, will not answer in every case. Let us reserve it for those of erosion and superficial ulceration, with undue sensitiveness of the tissues, and irritation of the nerves. The surface gives a peculiar velvety sensation to the finger, and in the larger number of cases will show abundant red granulations. Let us take Nitric Acid for the deeper, well defined ulcers, with hardness and thickening of the adjacent tissues, applying it with the pine pencil. When the tissues are full and doughy, with abundant secretion, we employ Carbolic Acid and Glycerine. Even glycerine itself, concentrated, makes an excellent application when the cervix is very much enlarged and gives an oedematous sensation to the touch. Persulphate of iron is an excellent application in some cases, especially when the part is deep-colored, and the ulcers are inclined to bleed. So in some other cases we get more relief from the application of Potash—sometimes the mild Sesqui-carbonate: in rare, old, stubborn cases, the Potassa Fusa.

Whilst naming these local applications, I must still insist that the larger number of cases can be cured without any, and that the most successful treatment is based upon our knowledge of specific remedies. If in any case we have a marked indication for any single drug, or for two or three remedies, the treatment will be pleasant and satisfactory. If there is no such indication, then we select from the remedies that influence the part, as we can recognize a local indication, or know their physiological action.

But whatever plan we adopt it will not do to forget that right living is essential to success. We can not expect a cure so long as a cause of disease exists, and neither can we expect to make a sound organ, or have a sound function, in a diseased or impaired body.

With regard to the use of vaginal injections in the class of diseases under consideration it is well to speak with considerable caution. There are some cases in which they are markedly beneficial, as there are others in which they are just as clearly injurious, and the trouble is, that it is very difficult to distinguish these cases. Possibly we can only tell by the result, a rather unpleasant way of administering remedies.

In many cases the use of a large basin of water, either warm or cold, (but gradually getting it cooler if it has to be used warm at first,) applied with the hand, the woman sitting over it, will be found the best means. Even a solution of Chlorate of potash, or a weak astringent wash may be used in this way with advantage. But in the larger number, all that we want is cleanliness, and the strengthening effect that may be obtained from the use of water.

Injections have a very wide range, from a simple weak solution of Chlorate of Potash to the strong vegetable or mineral astringents. It is hardly worth while to give formulas for them, as every physician will find in his text-books the common prescriptions. I have used an infusion of equal parts of Rumex, Alnus and Quercus Rubra with excellent effects in some old cases of vaginitis and ulceration, with good results, and I have also used Carbolic Acid and Sulphurous Acid in others. The trouble with Carbolic Acid is its very unpleasant odor, and in place of this I use the new remedy, Salicylic Acid, especially in cases where there is fetid discharge.

I wish to call attention to the advantages of *hot water* whenever there is relaxation of the perineal structures and abnormal discharges. The water should be used as hot as it can be borne—the patient sitting over a basin containing the water, and sponging herself; or if too weak for this, she may be rapidly sponged by the nurse. It has proven an admirable means of checking hemorrhage, and in profuse leucorrhœal discharges.

For cleanliness and as an antiseptic no agent will be found superior to Borax. Clothing, or anything that may be soiled by discharges, is thoroughly purified by washing in a hot solution of borax. It may be added to the water used as a bath, and if the vaginal discharges are fetid it should be used as a wash or an injection. In all operations no better surgical dressing can be found than a solution of borax, or, if a dry dressing is required than the powdered boracic acid.

A PRACTICAL TREATISE
ON THE
DISEASES OF WOMEN.

CHAPTER I.

ANATOMY OF THE FEMALE ORGANS OF GENERATION.

1. It is of the greatest importance to the student, in commencing the study of those diseases which have their origin in the female organs of generation, and a majority of which arise from structural changes, that he shall, first, perfectly master the anatomy of the parts. For this reason, and because the anatomy of these organs is seldom studied with that care that the other portions of the system receives, I have thought it necessary to prefix to this work, a concise Anatomical description of these organs; the diseased conditions of which we have hereafter to consider.

2. As a teacher of Anatomy, I have had to regret the indifference manifested by students of medicine, in obtaining a correct, and, as I might say, a practical knowledge of this subject, by means of dissection, and a careful examination of the parts, in the dissecting-room. There are no other means by which the student can obtain that knowledge of the structure and relations of these organs, their normal color, consistence, shape, and the sensation given to the touch; without, indeed, he expects to obtain this

information, when his services are called for to give relief in some disease of these organs. And yet I have seen many leave our halls, and commence practice, who, perhaps, never so much as examined the situation of the orifice of the urethra, or the direction of its canal; much less informing themselves in the dissecting-room, and by actual experiment, how the catheter should be introduced. Yet it is expected that they will be able to perform this operation, sometimes under embarrassing circumstances, and when probably the life of the patient is at stake. This is only a fair illustration of the necessity of this practical acquirement of anatomical knowledge, in order to fit the practitioner to meet every requirement on his skill.

3. I would then urge it upon every one, who expects to succeed in the practice of medicine, to improve every opportunity offered, of making himself perfectly familiar with the structure and relations of these organs; and that he may be able to do this, to thoroughly master the written description.

4. The female organs of generation are classed in two divisions — *external* and *internal*. The external organs consist of the *mons veneris*, *labia externa*, the *fourchette*, the *fossa navicularis*, the *clitoris*, the *nymphae*, and the *hymen*: these are all included under the general term of *vulva*.

The internal organs are, the *vagina*, the *uterus*, *fallopian tubes*, and the *ovaries*.

EXTERNAL ORGANS.

MONS VENERIS.

5. This is that rounded eminence, more or less prominent in different individuals, situated immediately anterior to the *symphysis pubis*, and directly above the vulva. The prominence of this part is partly owing to the bones, but more to a large quantity of loose cellular tissue, the interstices of which are filled up with adipose matter. It is covered by the common integument, and at the age of puberty is studded with numerous short hairs, among

the roots of which are embedded numerous sebaceous follicles. Its use is not known, though it is supposed to assist in the dilation of the vulva in parturition, owing to the great laxity of its tissue

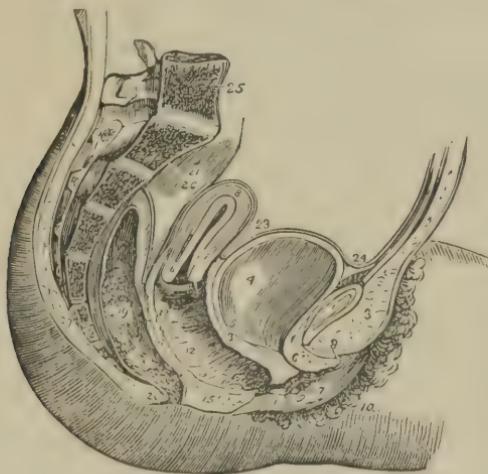


FIG. 1.—A SIDE VIEW OF THE VISCERA OF THE FEMALE PELVIS.

1. The symphysis pubis; to the upper part of which the tendon of the rectus muscle is attached.
2. The abdominal parietes.
3. The collection of fat, forming the prominence of the mons veneris.
4. The urinary bladder.
5. The entrance of the left ureter.
6. The canal of the urethra, converted into a mere fissure by the contraction of its walls.
7. The meatus urinarius.
8. The clitoris, with its præputium, divided through the middle.
9. The left nymphae.
10. The left labium majus.
11. The meatus of the vagina, narrowed by the contraction of its sphincter.
12. 22. The canal of the vagina, upon which the transverse rugæ are apparent.
13. The thick wall of separation between the base of the bladder and the vagina.
14. The wall of separation between the base of the bladder and the vagina.
15. The perineum.
16. The os uteri.
17. Its cervix.
18. The fundus uteri. The cavitas uteri is seen along the center of the organ.
19. The rectum, showing the disposition of its mucous membrane.
20. The anus.
21. The upper part of the rectum, invested by the peritoneum.
23. The utero-vesical fold of peritoneum. The recto-uterine fold is seen between the rectum and the posterior wall of the vagina.
24. The reflexion of the peritoneum, from the apex of the bladder upon the urachus to the internal surface of the abdominal parietes.
25. The last lumbar vertebra.
26. The sacrum.
27. The coccyx.

LABIA EXTERNA OR MAJORA.

6. Extending down from the prominence of the mons veneris, are two prominent cutaneous folds, inclosing an elliptical fissure, the common sexual opening, or *vulva*. They are flattened trans-

versely, and are thicker in front than behind: their anterior extremities are continuous with the mons veneris; their posterior extremities unite to form a commissure, called the *fourchette*, which is almost always lacerated in the first labor. Immediately within this commissure is a small cavity, the *fossa navicularis*. It extends from the fold, formed by the union of the labia, to the entrance of the vagina. The constituent parts of the labia majora are, a cutaneous layer, covering their external surface, a mucous layer, covering their internal surface, both provided with numerous sebaceous follicles. Internally they consist of a loose areolar tissue, which is more or less loaded with adipose matter. There is also a layer of dartoid tissue next the mucous membrane, and some arteries, veins, lymphatics, and nerves. The external surface of the labia, as well as their free convex borders, are covered with hair: their internal surfaces are moist and smooth, and in contact with each other.

7. The use of the labia majora is to favor the extension of the vulva during parturition, for in the passage of the head of the child, the labia are unfolded and completely effaced.

NYMPHÆ.

8. The nymphæ, or *labia minora*, are seen after separating the labia majora under the form of two layers of mucous membrane; they are narrow behind, where they commence upon the inner surface of the labia majora, and they enlarge gradually as they converge toward each other in front; at the clitoris they become slightly contracted and bifurcate before their termination. The lower division of the bifurcation is attached to and continuous with the glans of the clitoris; the upper division unites with that of the opposite side, and forms a hood-like fold, called the *preputium clitoridis*. The nymphæ are provided with very large crypts, which are visible to the naked eye, and secrete an abundance of sebaceous matter. Between the two layers of mucous membrane forming the nymphæ, is found a layer of erectile cellular tissue, which may be said to constitute its proper tissue. The nymphæ vary much in size, according to age; thus, in new born infants, they project beyond the labia majora, principally on

account of the imperfect development of the latter. They also vary in different persons, in some females being extremely small, and in others always projecting beyond the labia majora; and, lastly, in different countries; for with the women of some parts of Africa and Asia, as is well known, they become of disproportionate length, and protrude beyond the labia majora. This peculiarity of structure becomes so marked as to constitute an inconvenience and a deformity, and has led to the adoption of a kind of circumcision.

CLITORIS.

9. The clitoris is a spongy vascular erectile organ, forming a miniature representation of the corpus cavernosum of the penis. Its free extremity is seen in the anterior part of the vulva, about six lines behind the anterior part of the labia majora, and resembles a tubercle in the median line, covered as by a hood, with the upper divisions of the bifurcated nymphæ, and continuous with the lower divisions of the same. This free extremity, or glans, is covered by an external membrane, on which ramify a vast number of nerves derived from the internal pudic, the presence of which accounts for its extreme sensibility. Like the corpus cavernosum in the male, the clitoris arises from the ascending rami of the ischia by two roots, which expand and converge until they arrive opposite the symphysis, where they unite and form a single corpus cavernosum, flattened on each side; this, after passing for some lines in front of the symphysis, separates from it, and forming a curve, with the convexity directed forward and upward, and the concavity directed downward and backward, gradually becoming smaller toward its free extremity. It has a suspensory ligament precisely resembling that of the penis, and, like the penis, it is provided with two small muscles; the *erectores clitoridis*. This structure constitutes the clitoris an erectile organ, though this property in the healthy and normal state, is confined within narrow limits, only slightly increasing its length and volume, so that it never passes beyond the labia majora. Under the influence of disease or irritation, however, and sometimes as a natural condition, it may attain a considerable size.

VESTIBULE.

10. Lying immediately between the crura of the clitoris, and running downward and inward round the lower edge of the symphysis pubis, is situated a smooth groove about an inch in length, and which leads directly to the meatus urinarius. The physician will find it highly important to pay attention to this depression, because in the introduction of the catheter, it will guide his finger backward to the orifice of the urethra.

MEATUS URINARIUS.

11. The meatus urinarius, or the external orifice of the urethra, is situated at the inner extremity of the vestibule, and about an inch or an inch and a quarter below and behind the clitoris, and immediately above the projecting margin of the opening of the vagina. The meatus urinarius, in the majority of females, presents a projecting, soft, circular elevation, surrounded by numerous mucous follicles, and can be easily detected when the finger is introduced backward along the vestibule; in other cases, no projection is found,—the urethra terminating in thin and membranous walls. The orifice of the urethra may be observed as a central depression, that would appear scarcely large enough to admit a probe; yet it is very dilatable,—admitting the largest sized catheter with ease; and, under the influence of chloroform, it may be dilated so as to admit the passage of quite large urinary calculi.

HYMEN.

12. In virgins, the orifice of the vulva is provided with a membrane, concerning the form and existence of which there have been numerous disputes. It is called the hymen, and is a sort of diaphragm interposed between the internal genitals on the one hand, and the external genitals and urinary passages on the other. This membrane is generally crescentic in shape,—the aperture being at the upper part of it; though sometimes it is circular,—the aperture being in the center. Its free margin is fringed; it varies in breadth in different individuals, and thus regulates the dimensions of the vaginal orifice. The hymen has frequently been found without a perforation, and has therefore prevented the dis-

charge of the menstrual secretion. It is generally ruptured in the first intercourse of the sexes; and some small tubercles, which are found on the surface of the vagina near the spot where it was situated, are supposed to be the remains of it. These tubercles, which vary from two to five, are called *Carunculae Myrtiformes*.

13. The hymen is composed of a duplicature of mucous membrane, varying in strength, and containing within it some cellular tissue and vessels. The mucous membrane lining the vulva is continuous on the one hand, with the skin at the internal surface of the labia majora, and with the mucous membrane of the vagina on the other; upon the labia majora and nymphæ, it has a great number of sebaceous follicles, visible to the naked eye, and yielding a cheesy, odorous secretion; and also mucous follicles, which are most numerous near the meatus urinarius, the orifices of which are visible to the naked eye, and are often large enough to admit the blunt extremity of a probe.

14. In addition to these mucous follicles, destined to lubricate the parts and protect them from injury, are the large mucous glands, called the glands of Bartholine, or the *Vulvo-Vaginal* glands. These are situated at the sides of the vagina, at the union of the upper two-thirds of the vaginal orifice with the lower third. The duct by which they empty themselves is about half an inch in length, and opens at the side of the hymen. The mucus secreted by the follicles of the vulva, and by the vulvo-vaginal glands, is transparent and viscid, and, like the mucus secreted in the vagina, it has an acid reïaction,—reddening blue litmus paper.

15. All the parts immediately within the genital fissure are profusely supplied with blood from branches derived from the internal and external pudies, and abturator arteries, and with nervous filaments from the inguinal branches of the lumbar plexus, and the internal pudic nerve. The lymphatics of these organs are also very numerous, and, like the lymphatics of the external genital organs of the male, they open into the inguinal lymphatic glands. So that diseases of the labia, nymphæ, and clitoris, like those of the prepuce, penis, and scrotum, occasion enlargement of these glands.

INTERNAL ORGANS OF GENERATION.

THE VAGINA.

16. The vagina is a membranous canal extending from the vulva to the uterus; it is the female organ of copulation, and also forms the passage for the menstrual blood and the product of conception.

17. It is situated in the cavity of the pelvis, between the bladder and rectum, and is held in that situation by tolerably close adhesions to the neighboring parts. It is directed upward and backward, and coincides with the axis of the outlet of the pelvis; and, as the direction of the uterus corresponds with the axis of the brim, these two parts form an angle or curvature with each other,—having its concavity directed forward. The vagina is shaped like a cylinder flattened from before backward, and having its walls in contact, as may be seen by applying the speculum. Its length is variable, but it is always longer upon the posterior than upon the anterior wall. The former being usually about five or six inches in length, and the latter, four or five. The vagina is not of the same diameter throughout. Its lower orifice is the narrowest part, while its upper extremity is the widest. In females who have borne children, the upper part of the vagina forms a large ampulla, in which the speculum may be moved about extensively, and in which also a considerable quantity of blood may accumulate during hemorrhage. It is, likewise, a very dilatable canal, as is proved during parturition, and is, at the same time, elastic, and contracts after delivery, so as almost to return to its original dimensions. It would appear also to be capable of a vermicular contraction.

18. *Relations.*—In front, where it is slightly concave, it corresponds to the inferior fundus of the bladder, to which it is united by a very dense filamentous cellular tissue, resembling the dartos of the scrotum; it can not be separated from the urethra, which appears to be hollowed out in the substance of its walls. The close adhesion of the vagina to the bladder and urethra, accounts for

these latter organs always following the uterus and vagina in their displacements. Behind, the vagina corresponds to the rectum, through the medium of the peritoneum in its upper fourth, and, immediately, in its lower three-fourths. It adheres to the rectum by cellular tissue resembling the dartos, and analogous to that existing between the bladder and the vagina, though much looser; so that the rectum is not near so liable to follow the vagina in its displacement as the bladder. The sides of the vagina give attachment to the broad ligaments above, and to the superior pelvic fascia and the levatores ani below, and they are in relation with the cellular tissue of the pelvis, and with some venous plexuses. The upper extremity of the vagina embraces the neck of the uterus, which projects into the cavity, and upon which it is prolonged, without any line of demarkation,—forming a circular trench around the os tineca, which is deeper behind than in front. The lower extremity, or vulva, presents a corrugated, transverse projection in front, which is exposed by separating the labia and nymphæ: it narrows, and seems even to close the entrance of the vagina.

19. *Structure.*—In structure the vagina is composed of an external tunic of *contractile fibrous tissue*, a middle layer of *erectile tissue*, and an internal lining of *mucous membrane*. The exterior contractile fibrous tissue is a dense, cellular structure, of a lightish color, and has some resemblance to the texture of the body of the uterus. It is very vascular, and may be greatly distended, and seems to have a contractile power, and, from the presence of this, an obscure vermicular motion may take place, and assist the elasticity of the walls of the vagina. This external layer serves to connect the vagina to the surrounding viscera. The middle, or *erectile layer*, constitutes the proper membrane or tube of the vagina; it is enclosed between the two layers of fibrous membrane, and is thickest near the commencement of the vagina, and becomes gradually thinner as it approaches the uterus. At the commencement of the vagina, there is in front, and on each side of this orifice, an enlargement, or cavernous body, from three-fourths to an inch in breadth, which, when cut in two, resembles the corpora

cavernosa, or the corpus spongiosus of the penis, and hence it has been called the *Corpora Cavernosa Vaginae*. It consists of the same erectile vascular tissue which forms the middle layer of the vagina. These bodies commence near the body of the clitoris, and extend downward on each side of the vagina,—occupying the interval between the entrance of the vagina and the roots of the clitoris. They are not very thick in the center, where they unite between the meatus urinarius and the union of the roots of the clitoris; but they gradually enlarge from this point, and terminate below, upon the sides of the vagina, by enlarged extremities,—the posterior part of the wall of the vagina being the only portion not covered by them. These erectile bodies are covered by the muscular fibers forming the sphincter vagina, which pass over them on each side, from the sphincter ani to the body of the clitoris, to each of which they are attached.

20. The mucous membrane which lines the vagina, appears to be intermediate between those membranes which secrete mucus in different parts of the body, and the skin. It is covered with a *squamous epithelium*, which can be very easily demonstrated, and which is prolonged as far as the os uteri, where it terminates by a sort of indented margin, changing its character to the ciliated epithelium of the uterus. The internal surface of the vagina presents on both walls, but especially in front and near the orifice of the vulva, some transverse rugæ, which extend outward on each side from a middle raphe. These rugæ and raphe are more prominent on the anterior than on the posterior wall of the vagina, and the two raphe are called the columnæ of the vagina. This arrangement of the surface of the vagina does not extend beyond the external half of the canal; on the internal half, or that next to the uterus, the surface is smooth.

21. Throughout this surface are to be seen, in some cases with the naked eye, the orifices of numerous mucous follicles or ducts, which occasionally discharge considerable quantities of mucus, which is white, creamy and fluid, having an acid reäction, reddening blue litmus paper; and it contains numerous lameliform corpuscles, the result of a kind of exfoliation of the epithelium. The vagina is abundantly supplied with blood from the proper

vaginal arteries, which arise from the hypogastric. It also receives numerous branches from the uterine arteries. Its veins are very numerous, forming plexuses around it; they accompany the arteries, and terminate in the hypogastric veins. The lymphatics are also numerous, passing off in two directions; one division passing off to the inguinal lymphatic glands, the other to the lymphatic glands lying upon the sides of the anterior surface of the sacrum.

22. The vagina is abundantly supplied with nerves, which are derived from two sources; it receives its spinal nerves from the sacral plexus, being supplied by the visceral branches, which ascend upon the side of the rectum, vagina, and bladder, furnishing nervous filaments to each of these organs, interlacing with the branches of the hypogastric plexus. It receives its sympathetic nerves from the descending uterine nerves derived from the hypogastric plexus; these branches run along the sides of the vagina, and appear to be inseparably blended with the spinal filaments described above.

THE UTERUS.

23. The uterus, matrix, or womb, is the organ of gestation, destined to receive, to afford lodgment and nourishment to, and eventually to expel the ovum.

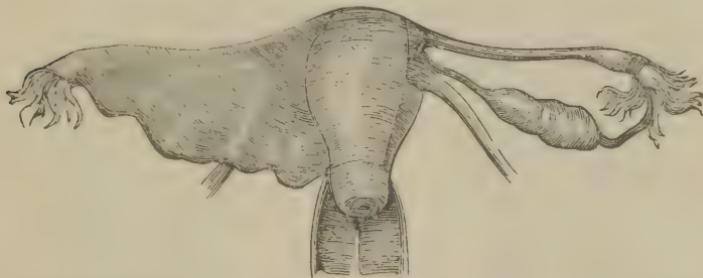


FIG. 2.—THE UTERUS, OVARIES, FALLOPIAN TUBES AND LATERAL LIGAMENTS.

It is a flattened organ of a pyriform shape, having the base directed upward and forward, and the apex downward and backward, in the line of the axis of the inlet of the pelvis, and forming

a considerable angle with the vagina. Its direction is liable to frequent variation, owing to the looseness and extensibility of its connections, which enables it to float, as it were, in the cavity of the pelvis, and to be moved to a greater or less extent. These variations in its direction become causes of disease, and will be hereafter considered. There is one deviation that frequently occurs—so very frequently indeed that it has been considered natural—and appears to be connected with the position of the rectum on the left side of the pelvis. The uterus occupies a diagonal position, lying from right to left, so that the fundus is directed toward the right ilium, and the cervix toward the left groin. In pregnancy, this deviation is almost constant, and has probably some relation with the usual position of the child, viz: that in which the occiput is turned toward the left acetabulum of the mother. This fact should be borne in mind, as ignorance of it might lead to errors in diagnosis.

24. *Size.*—In the unimpregnated state it is about three inches in length, two in breadth across its broadest part, and one in thickness. This is about the average size in the fully developed female, but it varies according to age, and certain physiological conditions peculiar to this organ. Thus, it is very small until puberty, and then acquires the size which it subsequently presents. In females

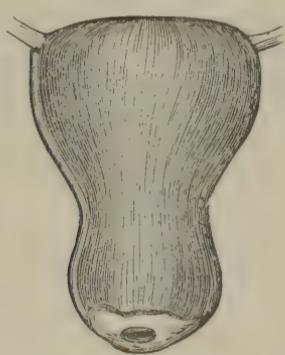


FIG. 3.—THE VIRGIN UTERUS.

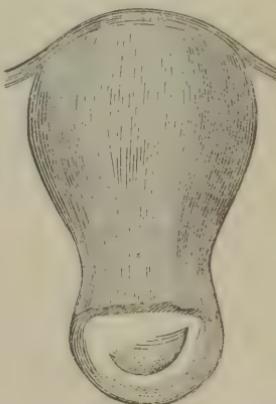


FIG. 4.—THE POST-PARTUM UTERUS.

who have borne children, it never returns to its usual size. It becomes enormously enlarged during pregnancy, being, when labor is near at hand, about thirteen inches long, and eight or nine across; it also becomes, sometimes, much enlarged from the development of certain tumors within its cavity. In old age it becomes atrophied and is sometimes as small as in new-born infants. The *weight* of the uterus is from eight to ten drachms at puberty, an ounce or an ounce and a half in females who have borne children, from two to six drachms in old age, when it becomes atrophied, and at the end of pregnancy from a pound and one-half to three pounds.

25. The uterus is divided by most anatomists into *fundus*, body, *cervix* or *neck*, and *os uteri* or *tineea*, or mouth of the womb. The fundus of the uterus, is that part of the organ that rises above the insertion of the fallopian tubes; it is convex, directed upward and forward, and is completely invested by the peritoneum, and is covered by the convolutions of the small intestine. When not distended it never rises as high as the brim of the pelvis, and can not therefore be felt in the hypogastric region. But it may be elevated by the finger introduced into the vagina, or by the uterine sound, so that it can be felt through the abdominal parieties. The body of the uterus is that part below the insertion of the fallopian tubes, and above the constriction which marks the commencement of the cervix. The boundary between the fundus and body is entirely arbitrary, there being no difference either in structure or form, sufficient to justify this division. I have given it, however, to prevent any misapprehension on the part of the reader. The body of the uterus is situated between the bladder and rectum, with which it is united by folds or plaits of the peritoneum, reflected from it anteriorly to the bladder, and posteriorly to the rectum: these anterior and posterior folds are two in number, between the uterus and rectum, and two between the uterus and bladder; they are called the *Anterior and Posterior Ligaments of the Uterus*. The peritoneum covering the uterus, is also reflected from it to the sides of the pelvis, forming the broad ligaments, which divides the cavity of the pelvis into two chambers, an anterior and posterior; the anterior containing

the bladder, the posterior the rectum and almost always some intestinal convolutions.

26. The cervix is the lower part part of the organ; it is distinguished from the body by a well marked constriction. It is from one inch to an inch and a quarter in length in adult females, who have never borne children, but it has in some instances been seen as much as three inches in length. In females who have borne many children, the cervix is shortened, especially that portion which projects into the vagina, which will be, sometimes, found entirely deficient. The cervix of the uterus is divided externally into two portions, by the insertion of the vagina. The inferior of these portions protrudes into the vagina, and is called the intra-vaginal: the superior portion is between the insertion of the vagina, and the body of the uterus, and is called the supra-vaginal. This superior portion of the cervix is in contact anteriorly with the lowest portion of the posterior wall of the bladder, and is connected to it by cellular tissue for the distance of about half an inch, or between the insertion of the vagina and the reflection of the peritoneum, from the uterus to the bladder. Posteriorly, the supra-vaginal portion of the cervix receives a complete investment of peritoneum. The orifice at the termination of the intra-vaginal portion of the cervix, forms the *os uteri* or *os tincæ*, through which a free communication is permitted between the cavities of the vagina and the uterus.

27. The orifice of the *os uteri*, in the virgin, is a small circular opening, dividing the extremity of the cervix into an anterior and posterior lip, the anterior lip of which is rather fuller and thicker than the posterior. After parturition this opening is transverse, and much larger, and is generally fissured. The sensation conveyed by bringing the pulp of the finger in contact with the extremity of the nose, is similar to that of bringing the finger in contact with the *os uteri*. In the healthy state the intra-vaginal portion of the cervix uteri is smooth, soft, and of a varying degree of elasticity, owing to the presence or absence of local congestion, and is of a pale rose color. There is also complete absence of pain on pressure.

28. In the body of the uterus is a cavity lined by mucous

membrane; its walls are in contact and are smooth and covered with a layer of mucus. The interior of the uterus does not present, however, a single cavity connected with the vagina by a canal through the cervix, as it has been described, but it consists of two cavities. These cavities will be considered separately.

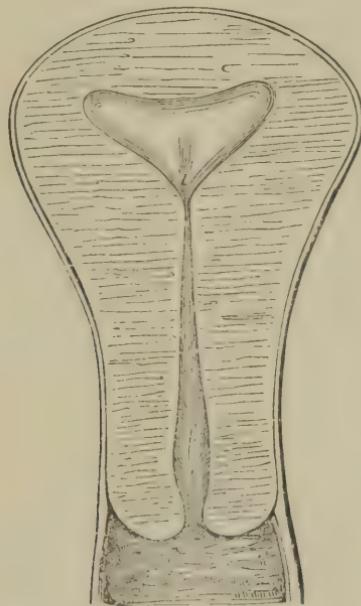


FIG. 5.—THE CAVITIES OF THE UTERUS AND CERVIX, IN THEIR NORMAL CONDITION.

29. The cavity of the body of the uterus, is of a triangular form, and has an opening at each angle. The inferior opening leads into the canal of the cervix, and at this point there is a natural stricture that closes the cavity of the uterus. This constriction of the internal orifice of the canal of the cervix may be readily ascertained by introducing the uterine sound, the instrument passing freely through the lower portion of the canal, but meeting with considerable resistance at about an inch or an inch and a quarter above the os. This inferior opening is frequently obliterated in females who have passed the age of child-bearing. The orifices at the superior angles, are those of the fallopian

tubes, they are scarcely visible to the naked eye, and are situated at the bottom of two funnel-shaped cavities, which represent the original bicornute condition of the organ. This triangular cavity is only seen when the organ is divided from side to side. In an antero-posterior division of the body of the uterus, the cavity resembles somewhat the cavity of the cervix.

The cavity of the cervix represents a cylinder flattened from before backward, and has upon its anterior and posterior walls, in the median line, a longitudinal prominence or crista, to which numerous oblique folds converge; this appearance has been named the *arbor vitae uterina*. It generally disappears after the first labor, at least in part, the folds being not so prominent; yet it is not unfrequently found as perfect as in the virgin uterus. Between these folds, are numerous mucous follicles, the closure of which, and their subsequent distension by the accumulation of their proper secretion, gives rise to that vesicular appearance so often noticed within the os and cervix uteri, and which was mistaken by Naboth for ova, hence they are called the *Uvula of Naboth*.

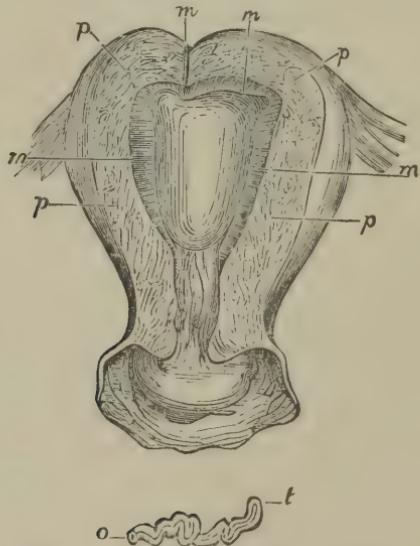


FIG. 6.—THE TISSUES OF THE UTERUS.

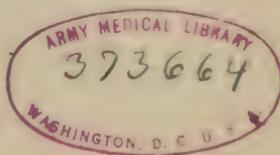
p p The muscular tissue; m m the internal lining or mucous membrane; o t a tubular gland.

30. *Structure.*—The constituent parts of the uterus are, an external peritoneal coat, an internal lining of mucous membrane, and the proper tissue of the uterus, situated between these two, together with the uterine arteries, veins, lymphatics and nerves.

The external investment or coat of peritoneum has been already described. It forms a complete coat to all that part of the uterus situated above the insertion of the vagina, with the exception of a space of about half an inch on the anterior portion of the cervix, which is connected by cellular tissue to the base of the bladder.

MUCOUS MEMBRANE.

31. The lining membrane of the uterus, differs considerably from all other mucous structures in the body. This difference consists in the absence of all sub-mucous cellular tissue, the mucous membrane forming a part of the uterine walls, and being continuous with the proper tissue of the organ. This difference of structure, and the great difficulty in its dissection, has caused many anatomists to deny its existence. In proof of the existence of this membrane Cruvelheir offers the following considerations: “*First*, every organized cavity which communicates with the exterior is lined by mucous membrane: why, therefore, should the uterus form an exception to this rule? *Secondly*, by dissection, it is shown that the mucous membrane of the vagina is continued into the neck of the uterus, and then into the body. Notwithstanding the difficulty of dissecting this membrane, on account of its tenuity and its close adhesion to the tissue of the uterus, its presence is demonstrated by the following observations: Under the microscope, the internal surface of the uterus presents a papillary appearance, but the papillæ are very small; it is provided with follicles or crypts, from which mucus may be expressed by a number of points, and which form small vesicles when distended with mucus, in consequence of obstruction or obliteration of their orifices. *Thirdly*, it is extremely vascular, and presents a capillary net-work of the same appearance as that of other mucous membranes; and, *Lastly*, it is constantly lubricated with mucus. Pathological observations also show that the internal surface of the uterus, like all mucous membranes, is liable to spontaneous



hemorrhages, from exhalation, without breach of continuity, to catarrhic secretions, and to those growths which are denominated mucous, vesicular and fibrous polypi; and it is generally admitted that, where there is an identity of disease, there is also identity of structure."

32. This uterine mucous membrane constitutes from one-fifth to one-fourth of the entire thickness of the uterine wall. Thus the thickness of the entire uterine wall being from five to six lines, the thickness of the mucous membrane would be about one line. The adherent surface, as we have seen, is so closely attached to the proper tissue of the uterus, as to be with great difficulty dissected; the free surface is smooth, of a pale rose color, and furnished with a ciliated epithelium, and numerous mucous follicles. On examining this surface, with the microscope, numerous minute points may be seen, dotting it in its whole extent. These are the orifices of simple tubular glands: they are mostly less than one-fourth of an inch in length, and arranged by the side of each other like basaltic columns; they are not all, however, straight, some being sinuous or vermiciform. It is supposed that these glands form the deciduous membrane, and furnish the menstrual secretion.

33. The mucus secreted by the uterus is transparent and viscid, resembling the mucus secreted by other mucous membranes. That secreted in the cervical canal is peculiarly viscid and tenacious, transparent, and of a whitish color. This mucus has an alkaline reaction, bringing back the blue color of red litmus paper, and is thus distinguished from the vaginal mucus, which has an acid reaction.

34. The proper tissue of the uterus is of a grayish color, very dense and strong, and creaks under the knife like cartilage. It is composed of fibers, the nature and arrangement of which it is impossible to determine in its ordinary condition. It is only when it is enlarged by gestation, that the true character of the uterine tissue and the arrangement of its fibers become apparent. At this time its tissue is soft, reddish, very dilatable, contractile and presents all the characteristics of muscular tissue. Its fibers are then arranged in the following manner: In the body the external thin layer is composed of two median vertical fasciculi, one on each

surface of the uterus; of a second fasciculus which runs along the superior border of the fundus, and of several oblique ascending and descending fasciculi which converge to, and may be traced upon, the fallopian tubes, round ligaments and ligaments of the ovaries. This first or superficial layer belongs exclusively to the body of the uterus. The second or deep-seated layer of the body consists of two series of circular fibers; these form two cones, which are connected by their bases upon the median line, the fibers blending together, and by their apices to the fallopian tubes. The neck of the uterus is composed entirely of circular fibers, which decussate each other at very acute angles, and are closely compacted together. The structure of the cervix differs from that of the body of the uterus, by the presence of a greater amount of cellular tissue and a greater degree of vascularity.

35. The uterus is very liberally supplied with blood-vessels. Its arteries are derived from two sources; the principal called the uterine arteries, arises from the hypogastric; the other set, the spermatic, arise from the aorta as they do in the male, descending with tortuous inflexions; they supply the ovaries, then passing along the broad ligaments, they distribute their terminal branches to the uterus. The branches of both sets are very tortuous.

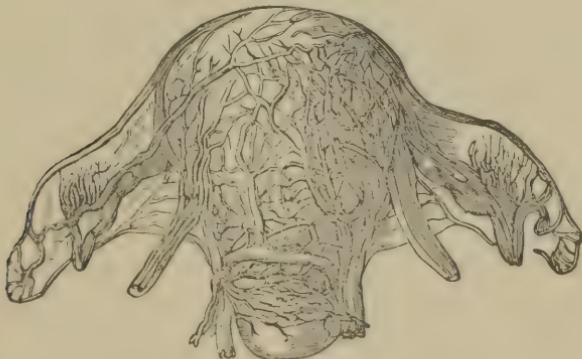


FIG. 7.—THE VESSELS OF THE UTERUS.

36. The veins follow the course of the arteries; the spermatic veins, ascending with the spermatic arteries, terminate as they do

in the male; the right in the ascending vena cava, the left in the renal vein. The uterine veins empty themselves into the internal iliacs. These veins are remarkable for their large size, during pregnancy and after parturition. The term *uterine sinuses* has been given to the large veins then found in the substance of the organ; and this term is not without foundation, for these venous canals are formed by the lining membrane of the veins, which adheres to the proper tissue of the uterus, just as in the sinuses of the dura mater; it adheres to the fibrous tissue of that organ.

LYMPHATICS.

37. Cruvelheir gives the best description of these vessels that I have seen. He says: "Having, in diseases of the uterus incidental to the puerperal state, frequently detected pus in the lymphatics of the uterus, I have been enabled to trace the exact distribution of these vessels, and would divide them into *superficial* and *deep*. The superficial lymphatics are situated immediately under the peritoneum; the deep-seated lymphatics form several successive layers, which occupy different planes within the substance of the uterus. The lymphatics, near the neck of this organ, enter the pelvic and sacral lymphatic glands. A certain number of the uterine lymphatics enters a lymphatic gland, situated at the internal orifice of the obturator canal. All the uterine lymphatics, excepting those near the neck of that organ, pass toward the sides and upper border of the uterus; some run within the substance of the broad ligaments, and they all reach the upper or tubal angles of the viscous. They are joined by the lymphatics of the ovaries, broad ligaments and fallopian tubes, and then ascend in front of the corresponding ovarian artery and veins. Having arrived in front of the lower part of the kidneys, they incline toward the median line, and enter the glands, which are situated in front of the vena cava and aorta; without having witnessed it, it is impossible to form any idea of the enormous size which the uterine lymphatics may acquire during pregnancy several of the vessels, when filled with pus, become so dilated, that one would, at first sight, believe that an abscess had been formed."

NERVES.

38. The nerves of the uterus are derived from the renal and hypogastric plexuses of the sympathetic system. The first of these nerves descend upon the spermatic arteries, and are distributed like the arteries, both to the ovaries and the uterus: the uterine branches being much larger than the ovarian.



FIG. 8.—THE NERVES OF THE UTERUS.

39. The uterine nerves, derived from the hypogastric plexuses, are divided into the ascending and descending branches. The ascending branches run upward along the lateral borders of the uterus, and terminate in its substance. The descending branches furnish numerous branches which pass to the lower portion of the body of the uterus; they then run along the sides of the vagina and terminate in it.

40. As the hypogastric plexuses, from which the uterus derives its principal nerves, are formed, not only from the filaments of the sympathetic nerves, but also from numerous small nervous filaments of the spinal nerves, derived from the sacral plexuses, it follows that the uterus is connected both with the ganglionic and cerebro-spinal system, a fact which accounts for the sympathetic

influence which it exercises during pregnancy or disease, over the various functions of organic life, as also on those of the cerebro-spinal system.

FALLOPIAN TUBES.

41. The fallopian tubes are two ducts, situated on each side of the uterus, and extending from it to the ovaries. They arise from the upper angles of the uterus, and pass transversely outward in the folds of the broad ligament for some distance, then bend backward and inward, in order to approach the outer end of the ovary, to which they are attached by a process of the proper ovarian ligament. The fallopian tubes are four or five inches in length, straight in the inner half of their course, but describe several curves toward their outer extremity. They consist of three coats—an external or peritoneal coat, a middle or muscular coat, and an internal lining of mucous membrane. The muscular coat consists of two planes of fibers; the external fibers are longitudinal and are a continuation of the oblique fasciculi of the uterus; the internal fibers are circular, and are evidently continuous with the deep-seated fasciculi of the uterus.

42. The mucous membrane of the tubes is continuous with the uterine mucous membrane at one extremity, and with the peritoneum at the other extremity of the tube; thus presenting the only instance in the human body where a mucous membrane becomes continuous with a serous membrane, or opens into a shut sac. This mucous membrane forms longitudinal folds, which render it susceptible of easy distention; it frequently contains an opaque, white, milk-like mucus, sometimes puriform, at other times transparent, and of greater or less quantity. The mucous membrane of the fallopian tubes, is more florid than that of the uterus, and the fimbriæ are redder than the rest of the tube. The arteries and nerves are derived from the ovarian. The veins are very numerous, and form frequent anastomoses in the walls of the tubes. When these veins are distended by a fine injection, the tube is bowed upward, as if in a state of erection, and the fimbriæ, which are likewise rendered turgid, spread out upon the ovary so that the dilated funnel-shaped cavity of the tube is brought in contact with that organ.

OVARIES.

43. The ovaries are two whitish bodies of a flattened oval form, one of which is situated on each side of the uterus, in the posterior layer of peritoneum of the broad ligaments, and behind the fallopian tubes. They are retained in this position by the broad ligament, and by a rounded cord, consisting principally of muscular fibers derived from the uterus, called the ligament of the ovary. By the opposite extremity, they are connected by another and a shorter ligament to the fimbriated extremity of the fallopian tube.

44. Their position varies at different ages, and also according to the state of the uterus. In the foetus, they are placed in the lumbar regions, like the testicles. During pregnancy they are carried up into the abdomen with the uterus, upon the sides of which they are applied. Immediately after delivery, they occupy the iliac fossæ, where they sometimes remain during the whole period of life,—being retained there by accidental adhesion. It is extremely common to find them thrown backward and adhering to the posterior surface of the uterus.

45. The size of these organs varies in different subjects, according to age, and according to whether the uterus is gravid or unimpregnated, healthy or diseased. The average size of the ovary is from fifteen to twenty lines in length, and from eight to twelve lines in thickness. They are relatively larger in the foetus than in the adult; they decrease in size after birth, and increase at the period of puberty—in old age they become atrophied.

46. Externally, the ovaries receive an entire investment of peritoneum, which adheres so firmly to the proper tunic of the organ, that it can not be detached; this is called the indusium. Within this is the proper coat of the organ—the tunica albuginea—composed of a dense fibrous tissue, resembling that forming the walls of the uterus. As the ovarian ligament which expands over this organ and assists to form this tunic, and other fasciculi of uterine muscular fibers, traverse the broad ligaments to reach it, we would be justified in considering this a muscular coat. Within this coat is a spongy and vascular tissue, the areola of which seems to be formed by very delicate prolongations from the external coat; in the midst of this tissue the vesicles are

deposited. In virgins of mature age, it contains from ten to thirty vesicles, formed of a delicate membrane, filled with a transparent, coagulable fluid. Some of these vesicles are situated so near the surface of the ovary, that they are prominent on its surface; others are near the center. They vary greatly in size,—the largest being between two and three lines in diameter, while others are not more than half that size. In addition to these fully formed vesicles, Dr. Martin Barry has shown that countless numbers of microscopic ovisacs exist in the organ, and that very few of these are perfected so as to produce ova.

47. After conception, a yellow spot is found on one or both ovaries, called the *corpus luteum*. The corpus luteum is a globular mass of yellow, spongy tissue, traversed by white areolar bands, and containing in its center a small cavity, more or less obliterated, which was originally occupied by the ovum. The interior of the cavity is lined by a puckered membrane, the remains of the ovisac. In corpora lutea, the opening by which the ovum escaped from the ovisac through the capsule of the ovary, is distinctly visible; when closed, a small cicatrix may be seen upon the surface of the ovary, in the situation of the opening. This corpus luteum generally continues until the middle of pregnancy; it often remains through that state, and for some time after delivery, but it gradually disappears. The cicatrization continues through life, and gives rise to that roughened and puckered appearance presented by the ovary. A similar body to the above has been found in the ovaries of those who have never borne children; they are distinguished by their small size, and by their containing no central cavity: these are called false corpora lutea.

48. The ovaries are very vascular; they receive numerous branches of the ovarian or spermatic arteries, which enter them by the lower margin. The veins accompany the arteries and empty into the spermatic veins. The nerves arise from the ovarian plexuses.

THE BLADDER AND URETHRA.

49. It is important, in obtaining a correct knowledge of the pelvic viscera in the female, that the difference in the form and

position of these two organs should be well understood. In the female, the bladder is generally larger than in the male; and, owing to the absence of the prostate gland, the neck of it passes down behind the symphysis pubis, to which it is firmly attached by the anterior ligaments. The ureters are inserted, and the urethra commences in the same part of the bladder in both sexes. The most important difference between the male and female bladder is the relations of its base. In the female, the base of the bladder rests upon the vagina below, and is connected to it by a firm cellular tissue; above the vagina it is connected for about a half-inch to the cervix uteri. As practical consequences of this relation, I might mention the ease by which the bladder may be examined through the vagina, or by puncturing it to evacuate the urine; and of performing lithotomy through the same part; the occurrence of vesico-vaginal fistulae, and the frequency with which carcinoma of the bladder follows the same affection of the cervix uteri.

THE URETHRA

50. Is between one and two inches in length, and is closely connected to the anterior wall of the vagina, by means of a spongy cellular tissue, which makes the urethra prominent in the vagina. When the body is in an erect position, it is nearly horizontal; but it is slightly curved with its concavity downward. The vesical orifice of the female urethra is the same as in the male, only there is no prostate gland. The vaginal orifice, or meatus urinarius, has already been described. The urethra is formed of two coats: the external coat consists of a thick layer of circular muscular fibers, which seem to be continuous with the fibers of the bladder; some of the longitudinal fibers of that organ being prolonged upon the outside of these. The mucous membrane of the urethra is very thick, and closely connected to the external coat, and it forms numerous longitudinal wrinkles, as in the male. In this mucous membrane we find the orifices of numerous mucous follicles. In women who have borne many children, the urethra is shortened, so as not to be more than an inch or an inch and a quarter in length; and the meatus urinarius is drawn backward

behind the pubis, and near its posterior face. The diameter of the canal in its natural state is about a quarter of an inch, though it is capable of great artificial dilatation.

51. In addition to the organs described as situated in the cavity of the pelvis, we have to consider the muscles, ligaments and fasciæ that surround and support them.

THE PERINEUM.

52. The perineum in the female is that space extending between the posterior commissure of the vulva and the anus, and upward between the vagina and the rectum. This forms the perineal triangle; its length is about an inch or an inch and a quarter between the vulva and anus, and it extends upward between the vagina and rectum about three inches, terminating in a point. The perineum is composed of a highly distensible cellular tissue, which contains within its substance but very little adipose matter. Although it is very distensible, elongating under the pressure of the child's head during parturition, to three, four, or even five inches, yet in its natural state it is very firm and dense; and owing to its position in the center of the outlet of the pelvis, and the attachment of the perineal muscles and ligaments to it, it forms the principal support of all the organs heretofore described. The perineum receives support in five different directions; from above, by the levator ani, anteriorly from the triangular ligament and sphincter vagina, posteriorly from the sphincter ani, and laterally from the transversus perinei. In addition to this, it is covered externally by, and receives support from, the common integument and superficial fasciæ.

THE LEVATOR ANI.

53. This pair of muscles forms a hollow cone, with the base directed upward toward the inlet of the pelvis, and the apex downward toward the outlet. It arises, as in the male, from the inner surface of the os pubis; from the spine of the ischium and from between these points, its fibers run down, like rays from a circumference to a center, and are inserted into the perineum, sphincter ani, extremity of the vagina and rectum.

54. *Uses.*—This muscular funnel contains within itself the pelvic organs, it antagonizes the action of the diaphragm and abdominal muscles, and prevents these organs from being forced downward by their contraction. It elevates the fundus of the bladder and the anus, and assists powerfully in the expulsion of the urine and the faeces. It also elevates and supports the perineum and the vagina, and those organs to which they are connected.

TRIANGULAR LIGAMENT.

55. The attachments of the triangular ligament are the same in the female that they are in the male. It is attached to the rami of the pubis and ischium of each side, and firmly brought across the triangular space formed by these bones, and terminates posteriorly in the perineum. It is perforated by the urethra and the vagina, but it is closely attached to them, so as to form a strong support to the anterior portion of the pelvic outlet.

THE SPHINCTER VAGINA.

56. This muscle arises from the sphincter ani, at the point of its insertion into the perineum and from the posterior side of the vagina near to this. From this point it runs along the sides of the vagina near the external orifice, its fibers expanding over the corpora cavernosa vagina. It is inserted into the crura and body of the clitoris.

57. *Use.*—It contracts the orifice of the vagina, which it assists to support, and compresses the erectile tissue of the corpora cavernosa vagina.

THE SPHINCTER ANI.

58. This muscle arises, as in the male, from the superficial fascia around the coccyx and by a fibrous raphe from the apex of that bone. It is inserted into the white, tough substance of the perineum.

59. *Use.*—To close the passage of the rectum, and by pulling backward the perineum, to assist in contracting the orifice of the vagina.

TRANSVERSUS PERINÆI

60. Arises on each side from the tuberosities of the ischium, and is inserted into the anterior part of the sphincter ani, and into the perineum. The use of this pair of muscles is to sustain and keep the perineum in its proper place.

61. It will be seen, by a close examination of the structures above described, that they form a perfect support to the pelvic viscera. And that the perineum performs an important part in this support, as into it are inserted all the muscles that form the floor of the pelvis. If this center be weakened from any cause, the result would be obvious, a displacement of some of the contained viscera, the muscles of it having partially lost one point of their attachment.

THE PELVIC FASCIA.

62. The pelvic fascia is attached to the inner surface of the os pubis, and along the margin of the brim of the pelvis. From this extensive origin it extends into the pelvic cavity, and divides into two layers, the pelvic and obturator.

63. The pelvic layer, or true pelvic fascia, when traced downward from the internal surface of the symphysis pubis, is seen to be reflected inward, to the bladder, forming the anterior true ligaments. It passes upon the bladder investing that viscus, to the point where it is united to the uterus and the vagina. Tracing it downward to the vagina, we find it reflected upon it, and uniting it firmly to the pubic bones: this forms the only fixed point of attachment of the vagina. It gives a complete investment to the vagina, terminating above with its walls, and not extending over the uterus, without we should consider the delicate cellular tissue connecting the peritoneum to the uterus as its continuation. At the sides of the pelvis, the pelvic fascia passes off upon the levator ani to the bladder, forming its lateral ligaments. In the posterior portion of the pelvis this fascia forms two layers; an anterior layer, which passes in front of the rectum, and between it and the vagina. The posterior layer passes behind the rectum, the two together, forming a complete investment for that intestine. It will thus be seen, that this fascia forms three complete sheaths;

one anteriorly for the bladder, a central one for the vagina, and one posterior for the rectum. The existence and mode of distribution of this fascia adds greatly to the strength of the floor of the pelvic cavity, which it partly forms, and contributes greatly to retain the pelvic organs in their proper positions. It also exercises considerable influence in limiting and directing morbid processes, and especially fluid collections.

64. The obturator fascia passes below, and on the outside of the levator ani, and has the same distribution as in the male. Situated between the pelvic fascia and the walls of the pelvis, and between it and the muscles and the viscera that it invests, are considerable quantities of cellular tissue. This is liable to inflammation, constituting pelvic cellulitis, which very often terminates in suppuration and the formation of pelvic abcesses.

LIGAMENTS OF THE UTERUS.

65. The ligaments of the uterus are two lateral, or broad, and two anterior, and two posterior, formed by duplications of the peritoneum; and two round ligaments, which pass from the anterior surface of the uterus, through the abdominal rings, to terminate in the cellular substance of the mons veneris.

BROAD LIGAMENTS.

66. The broad ligaments are formed of a duplication of the peritoneum, as it passes off from the sides of the uterus; the two layers become conjoined and pass to the sides of the pelvis. Enclosed between the lamina of the broad ligaments, we find the fallopian tubes and ovaries. This duplication of the peritoneum is very loose,—permitting the uterus to be freely moved in any direction, or even drawn to the orifice of the vulva, without making it tense. Hence, the general opinion that these ligaments give support to the organ and prevent prolapse, is without foundation. The anterior and posterior folds of the peritoneum, that pass from the uterus to the bladder in front, and to the rectum behind, are like the broad ligaments—very loose, and can not afford much, if any, support to the uterus.

ROUND LIGAMENTS.

67. The round ligaments are two muscular and fibrous cords, that arise from each side of the uterus, at a small distance before and below the origin of the fallopian tubes, and proceed in an oblique course to the abdominal rings. In this course they are situated between the layers of the broad ligaments. They pass through the rings and terminate in the cellular structure of the mons veneris. They are accompanied by a small artery, by several filaments of the ovarian plexuses of nerves, and by a plexus of veins. These veins occasionally become varicose, and form a small tumor, resembling varicocele in the male. The laxity of these ligaments in the non-pregnant condition of the uterus, prevents their giving the uterus any support; it is only during pregnancy, and when the uterus has passed upward into the abdominal cavity, that these ligaments are made tense. At this time they assist in retaining it in its proper position, and draw it forward against the abdominal parieties.

68. As these ligaments do not support the uterus, nor prevent its descent into the lower portion of the pelvic cavity, it is important to understand how it is retained in its normal position. By referring to page 58, it will be seen that the perineum and the muscles attached to it form a strong and perfect support, at the outlet of the pelvis, to all the pelvic viscera. Passing upward from the floor of the pelvis, we find the rectum posteriorly, the bladder anteriorly, and between these, the vagina. The vagina has been described as a cylinder, having a central cavity; but, in the healthy state of the parts, no cavity exists,—the anterior and posterior walls being closely applied to each other,—the vagina forming a solid column instead of a hollow tube. The vagina has a firm support below, being attached to the pubic bones by its anterior wall, to the perineum posteriorly, and between those two points it is supported by the triangular ligament and the sphincter vagina muscle. Upon the upper extremity of the vagina rests the uterus,—the two organs being closely attached to each other by the insertion of the vaginal walls upon the cervix uteri. So long, therefore, as the vaginal walls retain their resiliency and their

natural support below, they form a perfect support for the uterus. That this forms its only support, is fully proved in prolapsus of this organ; for under no circumstances does this occur, without there is an abnormal laxity of the walls of the vagina, or deficiency in the perineum.

CHAPTER II.

PATHOLOGY AND DIAGNOSIS.

69. PROBABLY in no other department of medicine has there been such great advances made in the last half century, as in the diagnosis of uterine disease. The question is often asked, why are these diseases of more frequent occurrence now than formerly? We have no reason to suppose that the physician of the present day has to encounter any new form of uterine disease; and though these diseases are probably of more frequent occurrence now, owing to the present social condition of women, than they were a century or two ago, yet we have to look, not to their increased frequency for the importance they have assumed of late years, but to the greater attention paid to them now by the profession, and the improved means of diagnosis.

70. The uterus and its appendages are liable to the same forms of disease that attack similar tissues in other portions of the body; they are produced by similar causes, and governed by the same pathological laws.

71. Thus the uterus and its appendages are liable to excess, defect and perversion of the functions of *irritability, sensibility, voluntary motion, reflex action, sympathy and secretion*. To a deficient supply of blood, *determination, congestion, inflammation*, and all of its results; to *atrophy, hypertrophy, degeneration, deposits and growths*. These diseases may be either primary, having their origin in the uterine system, or secondary, arising from some constitutional or general disease.

72. Primary diseases of these organs are of the most frequent

occurrence, from the fact, that at each periodical return of the menstrual discharge, there is a determination of blood to the pelvis, and a congestion of these organs, which at this time are peculiarly susceptible to any cause of disease; such as cold, atmospherical vicissitudes, etc. From the function of reproduction, which imposes on these organs numerous changes in structure and function, which increase their tendency to morbid action. And from other special causes, as excessive venereal indulgence, abortions, the use of emmenagogues taken with criminal intentions, etc.

73. Disease of these organs is secondary, when the local affection is produced by some constitutional disease, the local process always resembling, in some degree, the constitutional affection.

74. Primary disease of the uterine system may affect the general health, by the intensity of the disease; as in inflammation of the uterus and its appendages; by loss of fluids, as in menorrhagia, leucorrhea, ovarian dropsy, etc; by the retention of an excretion as in amenorrhœa; by the generation of a morbid material, which is conveyed into the circulation, as in cancer, some cases of ulceration, putrid substances in the cavity of the uterus, etc; and lastly, by sympathy; the diseased conditions of the uterine system exerting a great and important influence, both upon the functions of organic, and those of animal life. The sympathy existing between the uterus and other organs supplied by the sympathetic nerves, is very marked, affecting the functions of nutrition, secretion and excretion; that existing between the uterine system and the functions of animal life, is well shown in that protean malady *hysteria*.

75. In the diagnosis of disease in the uterine system, the physician has two sets of symptoms to guide him. *First*, the general symptoms, or the effects produced upon the system, by the local disease; and, *Second*, by the physical or anatomical signs, ascertained by an examination of the diseased parts and the discharges.

76. In functional diseases of the uterine system, the physician has to depend for the most part upon the general symptoms in forming his diagnosis; yet if he be a careful practitioner, he will

satisfy himself by examination, that no structural disease exists. These symptoms are generally so well marked, and so different from those presented by other affections, that there is very little danger of mistaking the disease. In structural disease the general symptoms are important, so far as they show the effect produced on the general health by the local disease. These symptoms, it is true, will generally point out the uterine system as the seat of disease, but they are never sufficient to point out the character of the morbid action.

Dr. Simpson has well pointed out the bearing of general symptoms on any suspected case of uterine disease, and the assistance to be derived from them in the formation of a correct diagnosis, as follows:

“ *First*, the local and functional state of the uterus: so far as it is indicated by the quantity, character, periodicity, etc., of the menstrual and mucous secretion of the organ; by the occurrence and non-occurrence of morbid uterine or vaginal discharges, as blood, serous fluid, pus, etc.; by the existence or non-existence of morbid sensations in the region of the uterus; such as different modifications of pain, intermittent or continuous; feelings of heat, weight, tension, bearing down, etc.; and if the patient be married, by the reproductive powers of the organ, as shown by sterility, by the occurrence of abortions, etc.

Secondly, the presence or absence of various morbid affections of the neighboring viscera, particularly of the rectum and bladder, and of branches of vessels and nerves passing through the pelvis, as indicative either of their sympathetic irritation or of their mechanical compression by the enlarged or displaced uterus.

Thirdly, the existence or non-existence of secondary local neuralgic pains, in the mammae, along the lower extremities in the loins, and at points along the course of the spinal column, in the parietes of the thorax or abdomen on either side, and especially under the left breast, along the colon, etc., increased in their intensity by any causes of increased action in the uterus itself, by the erect posture, menstruation, etc.

Fourthly, the state of the general constitution of the patient, as marked by various degrees of deviation from the standard of

health, and especially by the supervention of nervous, hysterical, dyspeptic, chlorotic, or cachetic symptoms.

“The several preceding series of morbid phenomena, consists of derangements in the vital actions of the uterus, or of other parts and organs secondarily affected, or of the constitution at large. Up to a late date in the history of uterine diagnosis, most practitioners remained, as some are still satisfied, with the degree of knowledge, which is afforded by the above sources of information. No one, however, who is practically acquainted with diseases of the uterus, can have any hesitation in declaring that the symptoms derivable from these sources are utterly inadequate, in the general routine of such cases, for the purposes of correct diagnosis, and are constantly liable to lead into fallacy and error when their individual evidence is alone trusted.”

78. As we have seen that, though the general symptoms are sufficient in most cases to locate the disease, but entirely insufficient to determine its character, our main dependence in forming a correct diagnosis rests upon the physical or anatomical signs—the result of a careful examination of the diseased parts. There are several modes of examination proper to determine the diagnosis of disease of the uterus and its appendages, which might be classified as follows: *First*, the *Supra-pubic* examination, or the examination of the abdomen by sight, touch, auscultation, and percussion. *Second*, a manual or tactile examination by the vagina. *Third*, a manual or tactile examination by the rectum. *Fourth*, a visual examination with the speculum. *Fifth*, the use of the uterine sound. *Sixth*, dilatation of the os uteri so as to permit the examination of the cavity of the uterus by the introduction of the finger. *Seventh*, the microscopic and chemical examination of the discharges from the uterus and vagina.

SUPRA-PUBLIC EXAMINATION.

79. By an examination above the pubis, we ascertain the existence or non-existence of enlargement of the uterus from pregnancy, tumors, hypertrophy, etc.; secondly, disease of the ovary, producing enlargement of that organ; thirdly, the presence of inflammation by the tenderness on pressure; fourthly, in some degree,

the presence or absence of adhesions in ovarian or uterine disease. By auscultation, whether or not the enlargement is due to pregnancy, when it has existed for more than five months. By percussion, the character of the enlargement, whether it is solid, fluid or gaseous. In making this examination, the patient should lie upon her back with the head and shoulders slightly raised, and the thighs semi-flexed upon the abdomen. The hypogastrium should then be examined in every direction by careful pressure with the hand, in order to ascertain whether there is any enlargement in that region; if there is, the fingers should be applied to it so as to ascertain its form, size, consistence, position as regards the median line, etc., by trying to move it from side to side, we may ascertain its degree of mobility, and the presence or absence of adhesions. By pressing the hypogastrium downward behind the pubis, the fundus uteri may frequently be detected, and if at this time the uterus be elevated by the finger introduced into the vagina, or by the use of the uterine sound, its size, and condition can be pretty accurately determined. The iliac regions should be next examined, as the ovaries and fallopian tubes are frequently found there when diseased. When examining the abdomen by percussion, the position of the patient should be varied in different cases, so as to bring the diseased organ or part in as close relation to the abdominal walls as possible. In auscultation of the abdomen, the stethoscope should be used, as it is less disagreeable to the patient, than an examination with the ear. In the supra-pubic examination the results will be greatly modified by the condition of the patient, thus in those of a spare habit, with thin and lax abdominal walls, very accurate information may be obtained on all the points above mentioned; but in those of an opposite condition the results will be unsatisfactory. In making this examination, it is necessary that the bladder and large intestines should be previously evacuated.

EXAMINATION PER VAGINAM BY THE TOUCH.

80. This is one of the most valuable means of diagnosis the experienced physician has at hand, and yet one of the least valuable to the inexperienced. To make this an available means of diag-

nosis, it is necessary that the finger should first be educated to recognize the healthy state of the parts, and then the changes caused by disease. It requires long practice and repeated trials to accomplish this, and yet any one may accomplish it, if he improves every opportunity that offers. The dissecting-rooms of our colleges offer facilities for obtaining this practical knowledge, that should never be neglected by the student. There, by repeated trials upon the dead subject, he will not only make himself familiar with the shape and relation of the interior genital organs, but he will so educate the touch, that with but a slight amount of after experience, (comparatively speaking,) he will be enabled to distinguish the various lesions of these organs.

81. In making an examination per vaginam, it is customary to place the patient on her left side, near the edge of the bed, with her back to the physician, the thighs drawn up toward the abdomen and separated, by placing a pillow between the knees. The physician should seat himself, with the right hand, toward the patient, as this will give him the use of this hand in the examination. The index finger should be well oiled, and the hand then passed under the clothes to the vulva: separating the labia, the index should be passed from behind, forward until it enters the vagina. The vaginal walls should then be carefully examined, as well as the meatus urinarius, course of the urethra, bladder, and rectum, the caliber of the vagina, its temperature, sensibility, moisture, the presence or absence of ulceration, of morbid growths, etc., the thickness of the perineum, the laxity or tonicity of the vaginal walls, whether a proper support is given to adjacent organs, etc. The finger should then be passed backward and upward, until it comes in contact with the os uteri. Greater care is necessary in examining the vaginal portion of the cervix uteri, from the frequency of disease of this part, and the difficulty of its detection. The finger should be passed around the cervix, in the groove between it and the vagina, and the pulp of the finger should be passed carefully over it, ascertaining its form, situation, volume, density, temperature, sensibility, the presence or absence of ulceration, morbid or malignant growths, etc. The os should then be examined as to size, form, softness, moisture, fissures, cicatrices, induration, etc.

By elevating the uterus on the tip of the finger, the size, weight, and mobility of the entire organ may be nearly ascertained, as well as any deviation in its position. After having obtained the necessary information, the finger should be carefully withdrawn, to judge of the character of the discharges.

82. The position of the patient on her side as above described, is the one generally adopted under all circumstances; yet where the principal points to be ascertained are the size, weight and position of the uterus, especially in any form of prolapse, the examination will be more satisfactory if made when the patient is in an upright position.

EXAMINATION BY THE RECTUM.

83. In making a rectal examination, the position of the patient may be the same as in an examination by the vagina; yet it is much better to have her placed so that the pulp of the finger may be brought in contact with the anterior wall of the rectum. Having the index finger well oiled, it may be readily passed into the rectum, by steady and gentle pressure against the sphincter; the finger should be introduced far enough to distinguish the body of the uterus, the other hand being placed upon the hypogastrum, pressing the bladder and uterus downward and toward the rectum. By a rectal examination we are enabled to examine the uterus in its entire length, fundus, body, and cervix, to determine the degree of uterine enlargement, to distinguish the character of its contents, whether hard, heavy or incompressible, or fluctuating and elastic; to detect tumors formed upon the posterior wall of the uterus, or between the uterus and the rectum. We may also ascertain the existence of disease of the ovaries and fallopian tubes, while they occupy the pelvis. It is also an important means of detecting displacements, especially retroversion and anteversion. In making an examination by the rectum, the physician should always ascertain whether it is in a healthy condition or not.

EXAMINATION BY THE SPECULUM.

84. Though the means already mentioned may suffice, in many cases, to diagnose the existing disease, yet in many others they will be insufficient, for while the touch enables us to recognize structural changes in the bulk, firmness and sensibility in these parts, the sight rectifies and perfects an erroneous or incomplete opinion, by showing the *nature* and *limits* of *ulceration*, *excoriation* or *eruption*, the appearance of the *cervix* and *vagina* in various stages of disease, etc. In addition to its use in forming a correct diagnosis, the speculum is an indispensable instrument in the application of caustics and other remedies to the diseased parts.

85. Many varieties of the speculum have been introduced and used by the profession. Some of these are very complicated, while others are adapted for some peculiar condition of the parts, and but few of them meeting all the requirements of the general practitioner. The two that are best adapted for general use, fulfilling all the indications required of the instrument, are the cylindrical glass speculum of Mr. Ferguson, and the four-bladed

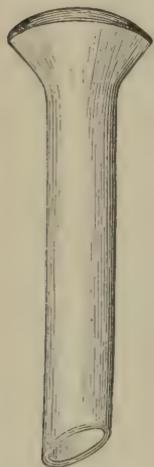


FIG. 9.—FERGU-
SON's SPECULUM.

speculum of M. Ricord. The first of these is a stout glass cylinder, about an inch and a quarter in diameter, having the inner extremity slightly beveled, and the outer extremity expanded, the vaginal portion of the tube being of the same diameter throughout; this is covered externally with a brilliant metallic coating, and this again with a thin layer of India rubber. The reflecting power of this instrument is very great, giving a clear view of the parts examined. This instrument is preferable to any other, when caustic has to be applied to the *cervix uteri*, as it is not corroded by any substance, always keeping clean and bright, while with the metallic speculum great care is necessary to prevent the caustic from coming in contact with the blades. The speculum of M. Ricord consists of four metallic, semi-cylindrical blades, joined together at a short distance from the outer extremity. When closed, this instrument forms a cone, but by pressing the handles together, after the

instrument is introduced, the inner extremity may be expanded to any extent desired. This speculum is so constructed that two of the blades may be removed, leaving a common bivalve instrument. This enables the operator to examine the condition of the vaginal walls, and make local applications to them, through the interval between the blades. This speculum is furnished with an obturator of polished wood, having a button on its inner extremity to receive the points of the blades; this completes the cone, and facilitates its introduction, and obviates the pain which the inequalities of the point of the speculum might otherwise produce. When the instrument is introduced, and the blades expanded, the obturator is disengaged by a spring at its outer extremity which, acts against the sides of the speculum.

86. There are two positions in which the patient may be conveniently placed for the introduction of the speculum. In the first and most common position, the patient lies upon her back, with the pelvis raised, and brought near the edge of the bed, her legs separated, and her feet resting on two chairs. The physician standing or sitting in front of the patient, introduces the fore and middle fingers of his left hand into the vagina, dilates its walls, and passes the speculum well greased and warmed, gently and steadily between and under them. After the instrument has been introduced four or five inches into the vagina, the obturator may be withdrawn, and light thrown in at the outer end of the instrument, unless the patient be placed opposite a window. If the os uteri is then in view, the speculum should be carefully moved in the vagina, until the os is fairly placed in the center of the internal orifice of the instrument; if it is not in view when the obturator is withdrawn, the speculum should be carefully passed up to it. After it has been brought to view, it should be carefully examined, in regard to its color, length and thickness,



FIG. 10.—RICORD'S SPECULUM.

the presence and character of erosions, ulceration, morbid growths, etc., the state of the os uteri, its size, form, color, presence, and character of the secretion, etc. In withdrawing the speculum, the vaginal walls, course of the urethra, meatus urinarius, and vulva should be examined with the same care.

87. The second position of the patient, for the introduction of the speculum, is the one adopted by Mr. Simpson; he says, "in this country great difficulties have been raised against the more general introduction of the speculum into practice, in consequence of the very disagreeable exposure of the person of the patient, which is usually considered necessary in its employment. In my own practice, I have laterally endeavored to avoid this very natural objection, by teaching myself to introduce and use the instrument when the patient was placed on her left side, in the position usually assumed in making a tactile examination, and with the nates near the edge of the bed. I strongly recommend my professional brethren to follow this plan, as by it, and with attention to the management of the bed-clothes, I have found that the instrument can be perfectly employed, with little, or indeed without any exposure of the body of the patient. The speculum is easily introduced, without the assistance of sight, and the mouth of it only requires to be afterward uncovered, in order to enable us to examine the cervix uteri, and top of the vagina."

EXAMINATION WITH THE UTERINE SOUND.

88. The profession is indebted for this, as well as for many other improvements in medicine, to Dr. Simpson of Edinburgh. Finding a great difficulty in detecting the existence and character of lesions of the body, fundus and cavity of the uterus, he proposed to obviate this, by an internal examination of the uterus, by means of the uterine sound. This instrument consists of a solid stem of silver, or some other metal capable of being bent in any manner required, and still of sufficient strength to retain any curve that is given to it. This stem is about nine inches in length, one-fifth of an inch in diameter, at its thickest portion near the handle, and one-tenth of an inch at its thinnest part, near the other extremity; the stem thus tapers from the handle

to the extremity, which terminates in a bulb, about one-eighth of an inch in diameter. The curvature of the instrument is like that of a common male catheter, the convex surface being marked by grooves, placed half an inch from each other, so that the finger, introduced into the vagina, may mark the length of the uterine cavity. The handle of this sound is flat, smooth on the convex surface of the instrument, and roughened on its concave surface, so as to keep the operator constantly aware of the direction of the point of the instrument.

89. In introducing the uterine sound, the patient may be placed on her back, the physician introduces the index finger of the right hand into the vagina, and brings its extremity in contact with the indentation formed in the cervix uteri by the os tincæ, so as to act as a guide to the point of the instrument. The sound is held in the left hand, and its point slipped along the palmar surface of the finger in the vagina, and directed by it into the uterine orifice; it generally afterward glides easily, under a slight propulsive force, through the canal of the cervix, and to the fundus uteri.

90. Though I have not space for a lengthy description of the uses of this instrument, yet as it comes highly recommended, and is likely to prove an important auxiliary to our other means of diagnosis, I have given the following observations on its use, by its originator, Dr. Simpson.

91. "If, after the bougie is introduced into the uterine cavity, we carry the handle backward toward the perineum, the upper extremity of the instrument—and consequently the fundus uteri placed upon that extremity—will be carried proportionally forward into the hypogastric region. One hand placed above the pubis will now feel the



FIG. 11.—UTERINE SOUND.

fundus uteri, with the central and thinnest part only of the abdominal parietes intervening between the fingers and the surface of the uterus. Provided the woman be not of a full habit, and the abdominal muscles sufficiently relaxed by position, we can now pretty accurately examine, with the hand placed on the hypogastric region, the state of the uterus as it is held forward on the end of the bougie, and we may always make ourselves still more certain of its condition, by retracting and otherwise moving the handle of the instrument, so as to bring the different parts of the superior and anterior surface of the uterine tumor under the touch of the fingers. By a slight turn of the instrument to either side, the lateral surfaces of the upper part of the viscus may, in the same way be brought under our tactile examination; and in spare subjects, I have occasionally found it possible, when the fundus was pushed against the abdominal parietes, to extend the manual examination to some distance along the posterior wall of the organ. In those cases where it can not be effected, the sound still enables us to make a more perfect examination of this, the posterior part of the uterus, than we could otherwise effect, by giving us the power of temporarily depressing and reflecting its posterior wall, so that it may be felt by a rectal examination. The vaginal examination of the lower part of its anterior surface may, in general, be more complete, by a similar aid of the instrument.

92. "In these different steps of examination, the degree and accuracy of information obtained is varied in different individuals by the differences which exist in the thickness of the tissues placed between the uterine surface and the fingers; but in most instances the presence of any marked irregularity in the uterine structures—such as the presence of one or more small fibrous tumors—their hypertrophic thickness, etc., may be readily made out, and under still more favorable circumstances, the exact physical conditions of the organ, in relation to its volume and dimensions, the morbid tenderness of individual parts of it, etc., may be precisely determined.

93. "When we employ the sound, for the purposes alluded to in the preceding sentences, namely, for enabling us to make hypo-

gastric examinations of the fundus and body of the uterus, the instrument, before its introduction, should have its extremity bent upon its stem at as nearly a right angle as the conformation of the genital canals admit, and, after being introduced, its handle should be well retracted toward the perineum. By attending to these circumstances, the fundus and body of the uterus will be more easily and fully turned forward, and our examination of it greatly facilitated. The same object will also be much promoted by retaining the directing finger at the cervix, during the course of the examination, both to steady the instrument and to serve as a fulcrum to it. In that case the handle may be retracted or pushed forward to any required degree by the forearm, while the other hand is employed in the hypogastric examination.

94. "The preceding remarks apply to the examination of the fundus and body of the uterus, parts which—unless when much enlarged, or the patient very thin—are generally looked upon as beyond the reach of any physical diagnosis.

95. "The physical states and relations of the cervix uteri, are generally ascertainable by the finger alone. Still, in various morbid conditions of the cervix, our tactile examination of the organ may be much promoted by the assistance of the bougie introduced into the uterine cavity. For instance, in chronic enlargement, cauliflower exeresence, and other organic diseases of that part, it is sometimes a matter of moment, both as regards our prognosis and our treatment, to involve or not the lower portion of the body of the uterus. In several such cases, I have found much assistance in determining this point, by gently depressing the uterus by the bougie introduced into it, and having the power thus of examining the organ immediately above the cervix, by compressing the structures of that part between a finger or two in the vagina, and the resistant sound placed in the uterine cavity, and consequently in the very axis of the viscus. In this way, each point in the circumference of this portion of the organ may be successively examined.

96. "These observations apply generally to such indications as can be made out through the use of the bougie, when the uterus

still retains that freedom of motion we have seen it possess, when it is itself in a healthy condition, and when there are no obstructions or impediments to its mobility in the surrounding parts. But there are cases where, from the organ having become more or less fixed and immobile, no advantage can be taken of those facilities which the power of partially displacing it in general allows us. In these instances the very circumstance, however, of the mobility of the organ being lost, and still more the degree and extent of its immobility, often materially assists in pointing out the true nature of the affection that is present. Thus in scirrhus of the cervix, the early immobility of that part, in consequence of the morbid degeneration invading the contiguous tissues from almost the very commencement of the disease, is often one of the first and best characteristics of that dreaded malady. In this instance, the fixed state of the cervix of the organ is detected by the direct application of the finger. In other states of disease, the cervix remaining comparatively free and unaffected, the body and fundus may be immobile from various pathological causes, as from morbid adhesions, the consequence of inflammation of its peritoneal surface, from the pressure of tumors or abscesses, etc. Or, again, both cervix and fundus may be immobile at the same time, from general carcinoma of the organ, etc. In all these cases the immobility of the body and fundus, its degree, extent, and seat can only be discovered by the bougie; and its use, along with other considerations, may further lead us to detect the special pathological state that may be the cause of the morbid attachment or fixture of these parts of the organ."

97. In reference to the use of the uterine sound, Dr. Churchill makes the following remarks: "This instrument has recently been the subject, with others introduced by the same distinguished author, of so much obloquy, that it seems but just, that I should here express my own opinion of its great value in experienced hands; at the same time, I must add, by way of caution, that it is one by which much mischief may be done, *if it be not used wisely and with great gentleness*. The uterus, even in a state of health, is by no means insensible; but in disease it may become

very sensitive. So that the careful use of the uterine sound may be occasionally followed by severe pain, and its indiscriminate and rough use may be highly injurious."

DILATATION OF THE OS UTERI.

98. In some cases of uterine disease, it becomes necessary to ascertain the condition of the uterine cavity, with greater precision than can be accomplished by the means heretofore described. This may be done by dilating the os and cervix uteri sufficiently to make an examination with the finger. The os uteri can be readily dilated by the use of a series of prepared conical sponge tents, each succeeded by a larger one, until the necessary amount of dilatation is attained. These sponge tents may be prepared, by taking a piece of sponge of the requisite size, dipping it in a strong solution of gum arabic, and then compressing it into the required form, by wrapping it with whip cord; as soon as it has dried, it will retain the shape given it and the cord can be removed; they should be slightly coated with lard, or some unctuous substance, to facilitate their introduction. The best mode of introducing these tents, is to fix them on a bent director, and pass them up by the finger, which has previously been introduced, to the canal of the cervix; the gum arabic is softened by the secretion of the parts, and the sponge expands to its natural size.

99. By this means we may be able to detect the presence of intra-uterine polypi, tumors, etc ; yet it should not be employed without the patient's life is endangered from frequent hemorrhages, or some other cause, traceable to some disease of the cavity of the uterus, which may admit of removal.

EXAMINATION OF THE DISCHARGES.

100. In all cases of disease of the uterus and its appendages, the discharges from the vagina should be carefully examined by the physician himself, never trusting to the description given by the patient, or by a third person. The discharges from the vagina may be divided into four classes: discharges of blood, mucus, pus and serum. Though the result of an examination of these discharges is in no case sufficient for the formation of a diagnosis,

yet in many cases it will prove a valuable auxiliary to the other modes of examination mentioned.

101. *Blood.* From the period of puberty until the female has attained the age of forty or fifty years, there is a periodical discharge of blood, occurring at intervals of from twenty-eight to thirty days, the duration of the discharge being from three to six days. This blood, forming the catamenial discharge, contains the product of the secretion of the tubular glands of the uterus, which would be appropriate to the formation of a decidual membrane; and is mixed with the secretions of the mucous membrane of the vagina and cervix uteri. This discharge presents all the characters of blood, except the power of coagulating. The presence or absence of this discharge should be ascertained in all cases, as well as the regularity of its recurrence, quantity, whether accompanied by pain or not, etc.

102. Discharges of blood occurring at other times than these, may arise from many different causes, as polypi, morbid growths, etc.; it may also be in various states of coagulation, discoloration and decomposition. The cause of these discharges should, in every case, be ascertained by the means heretofore named.

103. As the other discharges from the vagina arise from causes so various, a full description of their diagnostic value would increase this chapter to an unnecessary length. I would, therefore, refer the reader to the chapter on leucorrhea, where they are fully considered.

CHAPTER III.

DISEASES OF THE EXTERNAL ORGANS OF GENERATION.

SUPERFICIAL INFLAMMATION OF THE VULVA.

104. Any part of the external organs of generation may be the seat of inflammation. This inflammation may be superficial, merely affecting the skin or the mucous membrane, or it may be very severe, affecting both the skin and the sub-cutaneous tissues.

The superficial form of this inflammation does not give the patient much uneasiness, and it is very rarely that a physician is consulted, without the inflammation has produced an intolerable pruritus, which is much more distressing than any pain. This inflammation may continue, producing ulceration, and a discharge of a white, or yellowish-white muco-purulent secretion. In a few cases it assumes a phagedenic character, and leads to a rapid destruction of the adjacent tissues.

105. *Appearances.*—The skin or mucous membrane is reddened, and slightly tumefied, the mucous follicles are prominent, sometimes of a pale color, at others they present a deep red or purpleish appearance. If there is ulceration, the ulcers will be small and oval, and not more than from one to three lines in the longest diameter. Or there may be an aphous exudation covering a greater or less amount of the surface.

106. *Causes.*—This form of inflammation generally arises from a want of cleanliness; or from the acrid character of the vaginal or uterine secretions; though it may arise from causes that would produce inflammation of any other part of the body.

107. *Treatment.*—In many cases internal remedies will be important, and they will be selected by special indications, as in other diseases. If there is general feverishness, Aconite will be used as the basis of the prescription. For burning pain, sense of rawness or smarting, give Rhus. If the patient complain of extreme itching, use Apis. If there is pain in the back or limbs,

Macrotys. If much irritation of the bladder and urethra, and painful urination, Eryngium. If incontinence of urine, Gossypium. If the patient has sensations of chilliness and cool extremities, Ignatia.

^f The best local application in the majority of cases will be—R Salicylic Acid, Borax, aa. gr. xxx.; water $\frac{3}{2}$ viij. to $\frac{3}{2}$ xvi. In some cases a weak lotion of permanganate of potash will be better, and once in a while Veratrum or Aconite, if there is great tumefaction and threatened suppuration.

109. Other means have been employed to relieve the pruritus, but if this symptom arises from an inflammation or irritation of these parts, the means we have recommended will remove it. In all cases strict attention to cleanliness should be required.

PHLEGMONOUS INFLAMMATION OF THE VULVA.

110. This form of inflammation involves both the skin, and sub-cutaneous tissues, and occurs most commonly in the labia pudendi, though it sometimes attacks the mons veneris. It may affect one or both labia, and at times gives rise to great swelling of the parts.

The patient's attention is first drawn to it, by uneasiness in standing, sitting, or walking, for which she can assign no cause; then follow pain, heat, redness, and swelling. Owing to the character of the tissues, the inflammation runs a rapid course, and most generally terminates in suppuration. When suppuration takes place, the patient will complain of a throbbing pain in the part, and the pain upon motion or sitting will be greatly increased.

111. *Causes.*—It arises in most cases from some accident, a fall, or blow of any kind may give rise to it. It has been observed to arise after a first connection, from masturbation, and after delivery from the pressure of the child's head, as it passes through the outlet; it has also been observed to arise without any assignable cause, and it sometimes occurs during pregnancy.

112. *Diagnosis.*—This disease should be carefully diagnosed from vulvar enterocele, for nothing could be more dreadful than to plunge a lancet into the intestine confined within the labium of

a patient, under the mistaken design of discharging a supposed abscess. This, however, can never happen, if the differential points are remembered. It may be distinguished from hernia by the greater hardness of the swelling, and by its circumscribed character, and more especially by its not being changed by coughing, and not being reducible. It may be distinguished from œdema of the labium by its more circumscribed character, and darker color, from tumors of the labium, by its acute course, and by the greater degree of heat, redness, and pain.

113. *Treatment.*—In the forming stages of this inflammation, the treatment named in superficial inflammation should be employed, and with the topical use of Aconite or Veratrum the inflammation may be arrested. But it may be said that in the most of cases, the physician will be consulted too late to prevent suppuration; as soon as suppuration has taken place, the abscess should be opened by means of a longitudinal incision on the inside of the labia externa; this should be done as soon as the presence of pus is ascertained, in order to prevent the burrowing of the matter in the lax tissues of the part, and its disposition to open in several places and terminate in fistulas. It will be found that the tissues here do not heal readily, and, in the most of cases, it will be necessary to make use of stimulating injections. The best injection that I have ever used for this purpose, is a solution of Sesqui-Carbonate of Potassa,—one drachm to four ounces of water will be found sufficient in the most of cases; though I have occasionally used a saturated solution.

114. Abscess of the labia, which, from feelings of delicacy on the part of the patient, may have been left without any treatment, often terminate in fistulas. These may be very tortuous,—forming a communication between the rectum and the vagina,—producing recto-vaginal fistula, or passing from the rectum to the external surface of the labium, or from the vagina out through the labium. The two last varieties of fistula are to be treated in the same manner that we treat fistula in ano: by the use of the caustics to destroy the callous walls of the fistula, and the use of the ligature. See Howe's Surgery, pages 820-1. The treatment of recto-vaginal fistula will be given, when treating on diseases of the vagina.

ŒDEMA OF THE LABIA.

115. This is characterized by swelling of the labia, which becomes tense, shining, of a rose color, transparent, and has but little sensibility to the touch. When seen, it is generally accompanied with anasarca.

116. The treatment of this, in addition to that made use of for the general dropsy, will consist in steady compression of the parts. If the parts are very much distended, and produce great inconvenience, we might procure the discharge of the fluid by means of small punctures made with the point of the lancet.

COHESION OF THE LABIA.

117. This affection may be either congenital, or it may be the result of accidental disorders. It is very rarely, in either case, that the cohesion is complete; a small passage generally exists sufficient for the passage of the urine.

118. Sometimes, but very rarely, the cohesion is complete at birth; in this case, the evacuation of urine would be entirely prevented, and death would inevitably ensue, if the necessary division was not made. Cohesion of the labia may be caused by acute inflammation of the vulva, either spontaneous, or from the effects of a laborious labor; of a burn, of a venereal affection, of a wound or laceration, or any other cause sufficient to excite violent inflammation of these parts.

119. Where the cohesion is partial, and occurs at the posterior commissure of the vulva, there is always an accumulation of urine, and other discharges at that point, which, if suffered to remain, may produce lamentable effects, such as ulceration of the walls, fistulas of the rectum and perineum, &c.

120. *Treatment.*—The treatment consists in dividing the adhesions in the median line. This may be done with a bistoury, guided upon a grooved director; the parts should be carefully separated, breaking down the adhesions as much as possible with the fingers, or the director, as in many instances the adhesions may be broken up without the aid of the bistoury. To prevent reunion, pledges of lint, spread with the mild zinc ointment,

should be introduced between the cut surfaces, and continued until the parts are healed.

INFLAMMATORY OEDEMA.

121. Oedema sometimes occurs with inflammation of the contiguous parts. In these cases, it presents all the symptoms of phlegmonous inflammation, but which are increased by the presence of the oedema. With this there is generally fever, a dry and constricted state of the skin, scanty and high colored urine, etc. Here the special sedatives, with such other remedies as may be indicated (usually Apocynum) will give the best results. In many cases, much relief may be given by the employment of a brisk hydragogue cathartic, as the compound powder of Jalap and Senna with Cream of Tartar. In addition to this, the same local treatment should be employed that we have recommended for inflammation of the labia.

ENCYSTED TUMORS OF THE LABIA.

122. Encysted tumors of the labia are of more frequent occurrence than any other variety. They are of various sizes; some not being larger than a partridge's egg, while others have been reported as large or larger than a goose egg. These tumors are generally circumscribed and tense,—forming a round or oval projection from the vulva,—and they are often semi-transparent. The contents of the cyst are very various; sometimes a yellow serum, at others, a glairy, viscid fluid, a dark-colored puriform matter, or a semi-solid, lardaceous matter; the cavity is always lined with a distinct secreting membrane—the proper cyst wall.

123. These tumors, when small, may continue for years, and give the patient but very little uneasiness; in other cases, they may augment rapidly in volume, and give the patient much uneasiness, by their size and the tension of the parts, which is generally aggravated by motion. They very rarely produce any pain; though, in some cases, they have produced, by their presence and weight, irritation of the adjacent organs. Dr. Ashwell states that "the cyst, owing to the injudicious handling, sometimes inflames, and its contents are converted into a semi-purulent, thin

matter, tinged with blood. A great deal of irritation is established in the vulva, and the feeling of simple enlargement and fullness, which at first is alone felt by the patient, is now aggravated by heat and shooting pains, and tenderness in walking or sitting down. In some rare cases, ulceration has taken place in them, and a very unpleasant sore has been formed." On making an examination, the labium will be found enlarged, and the tumor may be, in general, defined beneath the skin; it is less identified with the surrounding parts than a phlegmonous abscess; it is not tender on pressure, nor is there any change of color.

124. *Diagnosis.*—This tumor may be distinguished from phlegmonous inflammation from its slow growth, and from the absence of the characteristic symptoms of inflammation, pain, heat, and redness; it may be distinguished from œdema of the labia by its circumscribed form, by its being confined to one labium, and by its slow growth.

125. The diagnosis between these tumors and inguinal and pudendal hernia, is often a matter of much greater difficulty; for both diseases may occupy the same position, and both have the same soft and elastic feeling. The distinguishing points between the two are, that the cyst does not swell and distend while coughing, and it can not be returned into the abdomen; if, however, there is any doubt on this point, the exploring needle should be used before making an incision into the tumor.

126. *Treatment.*—To remove these tumors, it is necessary that the cyst should be emptied, and the cyst-wall entirely destroyed. If the cyst-wall is not destroyed, it will continue to secrete fluid, and keep up the disease indefinitely. It has been recommended by some authors to dissect out the entire cyst; this would no doubt entirely eradicate the disease; but it is a painful and difficult operation, and, if the tumor is large, it is not unattended with danger. The surest and best method will be to make a sufficiently large incision into the tumor to evacuate the fluid, and then inject the cavity with a saturated solution of the Sesqui-Carbonate of Potassa. This injection will produce considerable pain for the first ten or fifteen minutes, but it is not followed by a high degree of inflammation. It changes the character of the secreting membrane,

excites adhesive inflammation of its walls, and thereby effectually destroys the reproductive power of the cyst. This injection can be repeated as often as may be necessary, until the parts are healed.

127. *Oozing Tumor of the Labia.*—This disease was first described by Sir Charles Clark. It arises in one or both labia, and sometimes extends to the mons veneris. He states that this tumor is sometimes so large as to leave scarcely any part of the labia free from it; it seldom projects far above the plane of the surrounding skin, often not more than a line or two, and rarely more than one-third of an inch.

128. The color of the tumor varies little from that of the cuticle of the neighboring parts; and a projection very much resembling it, might be made by the firm application of a piece of fine netting to the oedematous part, during a few seconds, the surface being unequal, consisting of irregular depressions and eminences, from the former of which the fluid oozes. In the immediate neighborhood of the tumor, oedema is occasionally met with, but the tumor is not itself oedematous; soon after the surface of the tumor has been wiped quite dry, a watery fluid begins to ooze from it, and forms drops, which having become large, at length run off, and keep the surrounding parts in a constant state of humidity.

129. This disease having once begun, continues to enlarge, and insulated patches of it appear in other neighboring parts; and after a time they will be found to run together, forming a single tumor. At first it does not produce much inconvenience, but as the tumor enlarges, the fluid increases in quantity, and by its constant passage over the neighboring parts, they become excoriated and irritable, and occasion much local suffering. Hence, smarting and shooting pains about the inner side of the labium, with a general sense of heat in the external organs, and pain and heat in passing water, become troublesome symptoms.

130. *Treatment.*—As these tumors are of very rare occurrence, being seldom met with in general practice, we have no means of knowing what effects would be produced upon them by those remedies used by Eclectics for analogous affections. Dr. Ashwell states, that this condition of the labium is not much under the

control of remedies. Contrivances to imbibe the fluid as it exudes, and prevent its running over the adjacent parts, are important. Lint, moistened with cold water, or a weak solution of alum or sulphate of zinc, covered with oiled-silk and supported by a bandage, will be found to give relief. In addition to these local means, great benefit will be derived from attention to the general health, which is always more or less impaired. A nutritious diet, with a moderate quantity of stimulants, in conjunction with the use of chalybeates and the vegetable tonics, will reestablish the general health of the patient, lessen the local disease, and prepare the patient for a radical cure.

Sir C. Clark operated once for the removal of this tumor, by excision of the labium. More recently the operation was performed by Mr. Rump. Both of these cases were successful. Churchill thus describes the operation performed by this last Surgeon: "The patient having been secured in the lithotomy position, the tumor was drawn forward from the pubis, and its base transfixed near the clitoris, and on a level with the nymphæ, with a straight bistoury, which was then carried downward to the fourchette, and brought out. The knife was reapplied, and directed upward toward the mons veneris. By this means the labium was speedily removed. The round ligaments were laid bare, and three small arterial branches bled, but did not require a ligature. The edges of the long elliptical wound were brought together by interrupted sutures and cold water-dressing applied." This appears to be the only means of effecting a radical cure of the disease.

VARICES OF THE LABIA.

134. According to Colombat, varices of the labia constitute a rather rare affection. They may be distinguished from other affections of the labia, by the following characters: The dilated veins form beneath the skin on one, and the mucous membrane on the opposite side of the labium; certain lumps, which are more or less protuberant as they are of older or more recent date. The tumors are indolent upon pressure, of a bluish color, and of consistence so soft that they disappear under pressure, to reappear again, as soon as the weight is taken off. In some instances these

tumors become irritated and then inflame, when they become the seats of fungus ulcers difficult to heal. This affection sometimes becomes very distressing in consequence of the pruritus with which it is accompanied.

135. *Causes.*—These are various; it may arise from too frequent coitus, from pregnancy too often repeated, from difficult labors, especially where instruments have to be used, and from any cause which obstructs the free passage of the venous blood through the pelvis.

136. *Treatment.*—If the cause producing the varicose condition of the vulvar veins can be ascertained, our efforts should be directed to its removal, for very frequently the varix disappears spontaneously when the cause that produced it ceases to act. In many cases the internal use of Pond's Extract of Hamamelis, in doses of ten to twenty drops four times a day, and its local use, will prove of great benefit. The parts should be properly supported and kept free from discharges.

137. With these applications, steady compression of the parts should be maintained. To relieve the pruritus, which often accompanies this affection, nothing will be better than Meigs' lotion of borax and morphia.

R Sodæ Borat $\frac{3}{ss}$.
Morphia Sulphas gr. vj.
Aq. Rose Distillat. $\frac{3}{iv}$.
M. F. Misturæ.

If the varices have terminated in the fungus ulcers above spoken of, it will be necessary to make free use of the sesqui-carbonate of potassa, until the ulcer assumes a healthy appearance. The best means of applying this is to saturate a small portion of cotton with the potassa, as strong as it can be dissolved, and then sprinkling on it as much of the dry powder as will adhere. This should be carefully placed in the ulcer, protecting the adjacent parts with the dry cotton. As soon as the fungus growth has been destroyed, I would recommend the use of the following solution until the ulcers are entirely healed:

R Salicylic Acid,
Borax, aa. $\frac{3}{j}$.
Water, $\frac{3}{xij}$. M.

THROMBUS OR SANGUINEOUS TUMOR OF THE LABIA.

138. This consists in an extravasation of blood into the cellular tissue of the labia, and results from a rupture of some vessels of the parts, most generally of the veins; and according to some authors, of those varicose veins which are not unfrequently found about the origin of the vagina and the labia. These tumors have always, so far as I have seen cases reported, occurred as a complication of parturition, thus it may occur previous to the delivery of the child, during labor, but much more frequently immediately after its termination.

139. This effusion of blood may effect one or both labia; it may also extend upward into the pelvis, or downward to the perineum; the tumor thus formed is of a variable size, owing to the distensibility of the tissues, sometimes becoming as large as a child's head; it is very irregular and of a livid or black color. As the distension of the parts increases, it will become intensely painful; the patient lies on her back, with the thighs drawn up and widely separated. She is scarcely able to move, and can not even support the weight of the bed-clothes. Dr. Dewees states, that should the parts not give way, the pain arising from distension is unceasing and truly agonizing; fever of a very active kind is kindled; delirium sometimes attends, and the female's life becomes severely threatened. Her sufferings are also augmented by retention of urine, as its passage is prevented by the tumor pressing firmly against the meatus urinarius of the urethra. These tumors have occurred, both during protracted and natural labors, but most frequently during the latter; so that there is nothing in the character of the labor that would cause the practitioner to suspect its occurrence. In some cases its progress is very rapid, the quantity of blood effused being so great as to produce syncope; in other cases, the swollen mucous membrane gives way in a short time, giving rise to dangerous hemorrhage. If, however, the labor is concluded without a rupture of the tumor after the lapse of a short time, the mucous membrane is observed to vesicate, and then to become gangrenous, when it yields to the pressure, and the contents of the tumor are discharged. In this

last case the blood is always found more or less coagulated, forming clots, and the subsequent hemorrhage is not so great.

140. There is no other affection of these parts with which this tumor could be confounded, if proper care be used in its diagnosis: thus it may be diagnosed from *hernia* by the rapidity of its formation, by its irregular form, the entire fluidity of its contents, its color, and by its not being reduceable, and not being changed by coughing. From inversion of the uterus, by the position of the tumor, which occupies the side or sides of the vagina; while the canal is free, the uterus and bladder being felt in their normal position.

141. *Treatment.*—The treatment of this difficulty will vary, according to whether it arises previous to, or during labor, or after the birth of the child. If it arises during labor, the tumor may become so large as to interfere with the birth of the child. If this be the case, we have to take our choice between leaving the case to the natural powers of the system, or of making an incision into the tumor and discharging the fluid. The danger in trusting the case to nature is, that if the tumor be large it will either prevent the passage of the head, or give way before it, giving rise to serious hemorrhage. It is, therefore, recommended in this case, to make a free incision on the mucous surface of the swelling, and allow the effused blood to escape. Should there be serious hemorrhage after the incision, we may check it, by steady compression over the part, and the application of ice. If, however, the enlargement is not so great as to offer a serious obstruction to delivery, it would be better to wait, and not lay open the tumor, (if the pain be bearable,) until the lapse of a few hours, for in this time, coagulation of the blood will take place, and the orifices of the ruptured vessels will be somewhat occluded; yet inasmuch as an incised wound heals more readily than one that results from sloughing of the tissues, the incision should be made at least as soon as any appearance of vesication is discovered. It would be well not to remove all the coagula at once, as it might produce a fresh return of hemorrhage.

142. If this effusion occurs either before or after labor, and the tumor formed is but of small size, we might attempt to pro-

duce resolution. For this purpose, there is nothing better than the Tincture of Arnica Montana ($\frac{3}{ij}$ to $\frac{3}{vj}$ of water) applied to the parts cold, by means of cloths saturated with the fluid. This will also be found to be one of the best applications that can be made to the parts, after the fluid has been discharged, without there is considerable fetor, with a tendency of the parts to slough; when it would be well to alternate this with the Liquor Sodæ Chlorinatæ, $\frac{5}{j}$ to $\frac{5}{x}$ of water. It is always necessary to sustain the strength of the patient by appropriate stimulants and tonics, nourishing diet, etc. The bowels should be kept regular, the patient quiet, and all untoward symptoms met by appropriate treatment.

VENOUS HEMORRHAGE FROM THE VULVA.

143. In this connection it may be well to mention, that cases of venous hemorrhage from the vulva, of a dangerous character, have been reported by several authors; some of which have been the subject of legal investigation, in consequence of the death of the female, and the supposition that the hemorrhage arose from a wound made with criminal intent.

144. Dr. Simpson relates a case of this kind, as reported to him by Dr. Kyle of Dundee; who was called to see the woman, but did not arrive until after she had expired. No grounds could be discovered for any suspicion that the woman had received a wound. She was in the lower rank of life, but respectable, and living on good terms with her husband and neighbors. She had been straining at the night-stool, when the hemorrhage came on. A large quantity of blood was found about her person; it had flowed into the genital organs. On making the autopsy, Dr. Kyle paid particular attention to the state of the uterus, which was fully expanded in pregnancy; but no effused blood was discovered in or around it. On examining the vagina and vulva, Dr. Kyle found a recent aperture in one labium, which, on further dissection, he traced into a large vein.

145. Dr. Simpson also alludes to the anatomical fact, that there was, at the root of each labium, a plexus of very large veins, which extended some way into the vagina. One of these veins,

probably in a varicose state, had burst in this instance. Possibly the coat of the vein was thickened, as well as dilated, and consequently it would not collapse, as veins usually do, but remained open, like an elastic artery.

146. He further states, that the case seemed to him particularly interesting and important, in relation to medical jurisprudence. A number of criminal trials had taken place in Scotland within the memory of the members, in consequence of women, generally but not always pregnant, having died from hemorrhage from the pudenda, similar to the above. In most or all of these cases, it had been averred, that the wound had been inflicted with criminal intent, by the husband or others. Dr. Watson has recorded two or three such cases; Dr. Seller has recorded others; and Dr. S. himself had seen the examination of the body in two criminal cases of this kind. In both the women bled to death from very small wounds of the pudenda. He was not aware that in any of the five or six cases of late years, tried before the Scottish courts, the plea of the apparent wound being a spontaneous rupture had been adduced. But such a case as this, that had lately occurred at Dundee, had evidently important bearings on the value of such a plea. (*Obstetric Memoirs*, Vol. 1, p. 277.)

147. Another case of this kind is reported by Dr. Thompson and Dr. Martin Barry; though in this case the woman was not pregnant. The patient, a married woman, nineteen years of age, had already borne two children, the last only six weeks before the accident. Dr. Barry saw her eight hours after the bleeding had commenced. He found her in a very weak and anemic condition, the skin blanched, the lower extremities already becoming cold; the countenance very anxious; much jactitation; pulse rapid, and extremely weak and fluttering. The vagina was immediately plugged; cold cloths were applied to the abdomen and vulva, and stimulants and astringents administered by the mouth. After some hours the patient had recovered to such an extent as to admit of her being turned upon her left side; and on examination a wound was discovered, large enough to admit the finger, to the depth of about half an inch, in the anterior wall of the vagina, at the union of its upper with its middle third. On the following

day, Dr. Thompson, who had been called in by Dr. Barry, found her in an extremely depressed state, but subsequently she recovered perfectly. This woman's husband, a cattle-drover, had been long absent from home, and on the evening of the accident, his visit lasted only half an hour, during which time he had been alone with his wife. Immediately after he had left her, the bleeding commenced. Had death actually occurred in this case, the existence of the wound might have given rise to suspicion of criminal violence having been resorted to.

WARTY TUMORS OF THE VULVA.

148. These excrescences may be developed upon any part of the external genitals, and are sometimes observed in the vagina. They may arise at any age, having been observed in children not more than three years old. These tumors may be single or in groups; their size varies from that of a pea to that of a hen's egg; they are generally predicated, but sometimes the base of the tumor is the largest part; there is scarcely any difference in color between these vegetations and the adjacent parts.

149. *Symptoms.*—These tumors may be present for some time, without giving the patient any uneasiness, but most commonly they produce considerable irritation, giving rise to a discharge of mucus more or less profuse, and which resists all means usually employed for its relief. If the tumors be large, they produce more or less inconvenience in walking, sitting, etc. Examination is the only means by which they can be detected.

150. *Causes.*—These excrescences sometimes arise from a want of personal cleanliness; at others, they are produced by chronic inflammation of the parts. In many cases they are undoubtedly of venereal origin, being the sequelæ of syphilis.

151. *Treatment.*—If the tumors are small, they may be easily removed by clipping them off with the scissors or knife. If they are large, they will have to be removed with the ligature, to prevent the hemorrhage, which is always very considerable when they are excised. After they have been removed, caustics should be applied to their roots, to disorganize them, and prevent their recurrence; probably the best caustic that can be used in this

case, is Carbolic Acid ; let it be thoroughly applied with a pine pencil—so thoroughly as to reach the base of the growths. If one application is not sufficient to entirely destroy them, it may be repeated in two or three days. If Chromic Acid should be used, then just enough to wet the root of the tumor ; for if it is too freely used, it will produce great inflammation and disorganization of the surrounding parts.

152. Should there be any suspicion that these excrescences are of venereal origin, the proper treatment for syphilis should be employed.

153. Quietness and rest is necessary for a few days after their removal. Should there be much irritation, following their removal, or the application of the caustic, the parts may be frequently bathed with cold water, which will generally subdue it.

VULVAR ENTEROCELE.

154. This consists of a hernia of the small intestine, which has forced its way downward by the side of the vagina into one of the labia, where it forms a tumor, which both raises up the skin, thus showing itself externally, and projects inward into the vulva. This variety of displacement is of very rare occurrence ; it was first described by Sir Astley Cooper, under the name of pudendal hernia. It may be diagnosed from other affections of the vulva, by the fact, that when the patient coughs or bears down, the tumor will become hard and tense, and, in coughing, there may be felt a distinct impulse or succession ; the diagnosis is also assisted by the fact, that in nearly every case it is reducible.

155. *Treatment.*—When called to a case of this kind, our first object is to reduce the hernia. In order to accomplish this with facility, the patient should be placed upon her back, with her hips elevated, and the thighs flexed upon the abdomen, in order to take off the tension of the abdominal muscles. The operator should then introduce one or two fingers into the vagina, to support the vaginal wall, and prevent its yielding as the intestine is passed up, while with the other hand he makes steady compression upon the tumor,—passing the bowel upward in the direction of the axis of the pelvic cavity. We may know that the bowel has

been reduced by the void that it leaves in the labium and corresponding portion of the vagina. For the purpose of preventing a displacement, the conoidal pessary may be used; it should be placed with its base upward, and retained by means of a bandage; or an India rubber bottle, as we have recommended in prolapsus of the bladder, might be found to answer a very good purpose.

VAGINAL ENTEROCELE.

156. This is but a species of the same variety of hernia; it presents itself in the canal of the vagina, instead of passing down to the vulva. We notice this here, from the fact that the diagnosis and treatment are the same in both varieties.

PRURITUS OF THE VULVA.

157. I have already mentioned pruritus of the vulva as an attendant symptom in superficial inflammation, and some other diseases of the vulva; it is, however, of more common occurrence as a symptom in other diseases, than those of the vulva. Thus, it may occur during pregnancy, from disease of the cervix uteri, from leucorrhea, from disease of the bladder, or meatus urinarius, from disease of the rectum, especially from the presence of anal worms, the *ascaris vermicularis*, from the presence of the *pediculus pubis* at the roots of the hair of the genitals, etc. In other cases, none of these causes can be detected; the pruritus appearing to be due to a perverted action of the nerves of the part.

158. The symptoms of this affection, according to Dr. Ashwell, are a tormenting irritation of the vulva, sometimes affecting the whole genital fissure, and occasionally the vagina some way down, and the mons veneris. Where this latter part is implicated, it should be ascertained whether there be parasite animals at the roots of the hair.

159. "The itching is increased by the warmth of the bed, by full and stimulating diet, high temperature, and fatigue from walking. If the parts be examined after the disease has existed for some time, little pimples, slightly elevated, will be discovered: and, if the patient has scratched severely with her nails, or even only with the ends of the fingers, these spots will be highly inflamed,—an acrimonious discharge, slightly tinged with blood,

oozing from them. In a more advanced stage of the affection, these points may be covered with a brown crust, the surrounding membrane being of a dark color, and somewhat thickened.

160. "Venereal thoughts are often excited from this irritation of the sexual organs, and they sometimes become so dominant and imperious as to constitute almost a mania. There is also sometimes leucorrhœa, which weakens the vagina, and pelvic weight and pains are added to the other local symptoms. After a time, the genitals, especially the labia and nymphæ, become somewhat enlarged, and the mucous membrane occasionally loses its vascular appearance, and assumes a white, sodden look. The general health soon suffers; the constant loss of rest, and watchfulness, induces much nervous derangement; the bowels become irregular; the appetite impaired; and defective nutrition is seen in the loss of flesh and palid aspect of the patient."

161. *Treatment.*—When consulted upon a case of this kind, our first object should be to ascertain the producing cause. Thus, the condition of the bladder, the urethra, vaginal wall, cervix uteri, rectum, etc., should be carefully ascertained. If the disease arises from any of the causes before-mentioned, our treatment should be directed to the removal of this cause; for, with this removal, in many cases, we will have a cessation of the pruritus. Without this, we can not expect a cure of this affection; and our efforts directed to the arrest of the external symptoms, might greatly aggravate the primary and more important disease.

162. Many agents have been used as local applications for the relief of the pruritus, and with a variable degree of success. In the pruritus attending pregnancy, Professors Dewees and Meigs recommend the lotion of Borax and Morphia. Professor Meigs says, "having been consulted a great many times for the relief of pruritus vulvæ, and most frequently in pregnant women, I have rarely had occasion to order any thing more than the following formula,—viz:

R Soda Borat, 3 ss.

Morphia Sulphas, gr. ij.

Aq. Rosæ, distillat, 3 iiiij.

M—F. to sec. art. misturæ.

I direct the person to apply it thrice a day to the affected parts, by means of a bit of sponge or a piece of linen,—taking the precaution first to wash the surfaces with tepid water and soap, and to dry them before applying the lotion."

163. In some cases permanent relief will only be obtained by the use of internal remedies, and these will be selected by the special indications. *Rhus* is indicated by the burning pain; *Apis* by the itching and burning extending to the urinary passages; *Collinsonia* by the sense of contraction and pain about the anus; *Hamamelis* by the sense of fullness and inclination to prolapse; *Macrotys* by the lumbar pain, painful menstruation, and pain in the thighs; *Pulsatilla* by the nervousness and mental despondence; *Bromide of Ammonium* by hysterical symptoms, oppression in the chest, loss of consciousness, etc.

164. I like the lotion of Salicylic Acid and Borax as well as the one of Dr. Meigs, and if there is some erosion, it will prove better.

CHAPTER IV.

DISEASES OF THE URETHRA.

INTRODUCTION OF THE CATHETER.

165. Before describing the diseases to which this canal is liable, it may be well to give some information in regard to the use of the catheter. This may seem like a very simple operation, which any one could perform; but, when the young practitioner has occasion to test his skill, without he has thoroughly acquainted himself with the anatomy of the parts, he will, in all probability, find much difficulty in its introduction, and may, unknowingly, inflict great injury upon the patient.

166. We distinguish four different conditions of the parts, in either of which the catheter may have to be used. *First*, in the unmarried woman; *Second*, in the married woman; *Third*, during pregnancy; *Fourth*, during, or soon after, delivery. These differences consist either in an alteration of the position of the meatus urinarius, or in the direction of the urethra.

167. By referring to the anatomy of these organs, it will be seen, that the external orifice of the urethra is situated about one inch farther inward than the clitoris. At its commencement in the anterior wall of the vagina, it is somewhat protuberant, and the orifices of numerous mucous ducts may be seen around it. From this point, the canal of the urethra extends upward and backward, along the anterior wall of the vagina, in which it appears to be imbedded; as its projection into the canal of the vagina can be plainly felt. The length of the urethra is between one and two inches. The differences named, consist in,

1st. In young persons, the external orifice of the urethra is immediately below the symphysis pubis, and nearly level with the anterior face of that bone.

2d. In women, who have borne many children, the urethra is retracted or shortened, so as to be rarely more than an inch and a quarter in length; and the orifice will be found behind the pubis, near its posterior face.

3d. In any enlargement of the uterus, whether it be the result of gestation or disease, the direction of the urethra will change with the ascent of the uterus, so that in the latter stages of pregnancy, the urethra will be found nearly perpendicular; passing along the internal surface of the symphysis pubis; and the meatus will be found behind the pubis, near its posterior face.

4th. During labor, the direction of the urethra will be the same, but the descent of the head into the pelvis, in some cases, so compresses the urethra, that the catheter can with difficulty be introduced. In this case, it is recommended to place two or three fingers of one hand on the head, and carefully raise it; and with the other, introduce the catheter. Immediately after labor, the tissues are very much relaxed, and considerable care must be used in its introduction.

168. In introducing the catheter, the patient should be placed on her back, with the thighs flexed, and brought to the edge of the bed, so as to facilitate the manipulations of the physician. Under ordinary circumstances, exposure of the patient is neither necessary nor justifiable. The index finger of one hand should then be introduced into the vagina, carrying its radial surface along the vestibule, until it comes in contact with the protuberance marking the orifice of the urethra; if this elevation is absent, as is sometimes the case, the finger should be carried upward, until it comes in contact with the projecting wall of the urethra; the finger should then be gently withdrawn along the course of the urethra, when it will come in direct contact with the meatus urinarius. Having then one finger at the orifice of the urethra, this serves as a guide for the catheter, which being previously oiled, is introduced by the other hand. Having carried the point of the instrument along the finger, the apex of which is placed on the meatus, it will be found to readily enter the orifice. It should then be introduced in the direction of the urethra, carefully passing it, using but gentle force, until it enters the bladder; this may be known by the discharge of urine, which should be received in some small vessel prepared for the purpose.

URETHRITIS.

169. This affection, though rare, is sometimes met with by the physician. It may be either acute or chronic, though in all the cases that I have seen reported, the chronic disease always resulted from an acute attack. It may occur in women of any age, and independently of any venereal affection.

170. *The symptoms* of this disease are: constant pain along the course of the urethra, which is greatly increased by passing the urine; there is also considerable bearing down; the urine is passed with great difficulty, and but a small quantity at a time; the patient having a constant desire to evacuate the bladder. In some cases, indeed, it can not be passed at all, for as soon as the urine touches the inflamed mucous membrane, spasmotic contraction takes place, which prevents the excretion of even the smallest quantity. Upon introducing the finger, and passing it

over the course of the urethra, it will be found to be extremely painful, in acute cases; and in the chronic, it will be so tender, that the patient can bear but very little pressure on it; in these cases, sexual intercourse is very distressing. If the orifice of the urethra be dilated, the mucous membrane is seen to be unusually florid, and it may be so swollen, as to be everted, and protrude from the orifice; the passage of the catheter gives very severe pain, which does not extend, however, to the bladder. There is no discharge attending the acute stage of this disease, and it may thus be diagnosed from gonorrhœa; but in two cases of chronic inflammation, which I attended, there was ulceration, and a very small discharge of muco-purulent matter.

171. This disease may arise simply from cold, and may be associated with considerable irritation of the bladder, and sometimes kidneys. The urine is scanty; there are frequent calls to pass it, and the patient complains of scalding and irritation of the vulva. In some cases it will be associated with disease of the vagina and uterus, and will only be relieved when this is cured. Prostitutes not unfrequently suffer from severe urethral irritation, and some urethritis, and sometimes, though the disease is not gonorrhœal, it may be transmitted to others. I am also satisfied that promiscuous intercourse on the part of the husband may sometimes give rise to an irritation which may be transmitted to the wife, and assume the form of simple urethritis.

172. The diagnosis is not always easy, and when persons have been exposed it is sometimes difficult to determine whether it is simple urethritis or gonorrhœa. There is very much difference in persons with regard to this. A woman may carry gonorrhœa for months, and suffer very little from it, whilst others would suffer most intensely. So in this case: the simple inflammation may run as high, there may be as much suffering, and as abundant a discharge, as in the severest cases of gonorrhœa.

When a person has suffered from urethritis once, especially if not properly treated, the urethra is likely to be left in an irritable condition, and may be a life-long source of annoyance. Every functional wrong of the reproductive apparatus seems to manifest itself here by sympathy, and after a time the bladder becomes permanently diseased, its walls and mucous membrane either being

thickened, or from atony of bladder and vagina there is partial prolapse of the bladder. In both cases there will probably be increased secretion of mucus, and a plentiful deposit of the triple phosphates. Thickening of the tissues of the urethra may also result, and the development of those irritable epithelial growths sometimes known as irritable tumors of the urethra.

The following case will illustrate the usual symptoms:

Mrs. M., aged 17, had been recently married, was attacked Feb. 9, 1857, with great pain and tenderness along the course of the urethra, and difficulty in micturition; the urine, as it was passed, producing excessive pain, and sometimes, as she said, appearing to stop in the middle of the passage. After the first day, she complained of a pressing, or bearing down, which was greatly increased whenever she attempted to evacuate the bladder. For the first three days, there was a considerable discharge of blood from the urethra, but after this it gradually ceased. I was called to see her on the second day of the attack. On making an examination, I found considerable heat in the lower portion of the vagina, which was more apparent along the course of the urethra, and more especially near the meatus urinarius. The tenderness of the parts was so great that I could scarcely make an examination. Upon separating the labia the meatus could be seen very much swollen; the orifice was dilated, and the mucous membrane slightly everted. There were also slight constitutional symptoms present. She had been married five or six days, and from the first she had felt some difficulty in passing her urine, and considerable tenderness of the parts.

173. *Treatment.*—If the disease is acute and severe it is best that the patient should have rest in a recumbent position, especially if near the menstrual period, or associated with metritis. In this case I like the action of Veratrum and Gelsemium, or Veratrum and Macrotys, if there is uterine or pelvic pain. Sometimes a hot fomentation of hops, stramonium or poppy heads give great relief at first, and if there is much vesical tenesmus this may be supplemented by a rectal enema of Tinct. Opium and Lobelia. If the bowels are constipated, and the patient suffers from this, a free evacuation may be had by the use of Crab Orchard Salts and Sulphur, or if easily influenced, by a Seidlitz powder.

There are cases in which we would give *Rhus*, *Bryonia*, *Dioscorea*, *Eryngium*, *Pulsatilla*, *Apis*, *Gossypium*, or even *Copaiba* and *Cubeb*s, early in the disease. Our rule is—and we find it good policy to follow it in all cases—to give any remedy that may be specially indicated without reference to the situation or the name of the disease. The burning character of the pain, pain in forehead, peculiar appearance of the papillæ of tip of tongue, calls for *Rhus*. The *Bryonia* will be called for by cutting pains in the region of the bladder, almost always associated with an inclination to cough; the *Dioscorea* by abdominal pains and tenderness; the *Eryngium* by burning in the bladder, constant desire to pass water, and painful micturition; *Pulsatilla* by the nervousness and fear; *Apis* by the itching and burning in the parts; *Gossypium* by the dribbling of urine, or by non appearance of menses, if it is time for them; *Copaiba* and *Cubeb*s by the abundant yellow purulent discharge.

As the disease goes along the acute symptoms subside, and the patient complains only of difficulty in passing water, uneasiness in its passage, a sensation of bearing down, and more or less discharge from the vagina or urethra. It may be sufficient to establish an unpleasant leucorrhœa, or even permanent displacement of the uterus. Hence the remedies must be carefully selected from such as have been named; or we may think of the *Cannabis Indica*, *Staphysagria*, *Euphorbia Hypericifolia*, *Apocynum*, *Phosphorus*, *Hamamelis*, and others.

As a general rule, I like the topical action of *Salicylic Acid* and *Borax* better than any thing I have used. If it becomes necessary to inject the urethra, nothing is so good as a solution of *Phosphate of Hydrastia*.

IRRITABLE URETHRA.

174. In the last few years we have had many cases of irritable urethra. It is not confined to public women, but is usually the result of sexual excesses.

The patient complains of burning or scalding along the course of the urethra, frequent desire to pass water, and tenesmus. In some cases it is paroxysmal, the patient suffering severely for a time, and then for some hours having relief. In some cases it is only felt during the day, and especially if she is much on her

feet, but in others the patient has to pass water several times during the night, and suffers constantly. Pretty soon you will see it wearing upon the general health, and as weeks go by, the patient has a worn and haggard appearance, and complains of various functional lesions.

175. *Treatment.*—I have obtained the best results in these cases from the use of Rhus, Apis and Eryngium, according to the special indications heretofore named. I select the remedy, and use it in alternation with Aconite. Prof. King's prescription of Elaterium will be found a specific in those cases in which there is inflammation of the base of the bladder, with deep pain and tenesmus. Of a tincture of Elaterium we would give twenty drops three times a day, until it acted upon the bowels, then in doses of five drops.

If there is frequent micturition with pain and great tenesmus, extending to the bladder, I would recommend Stramonium, as follows: R Tinct. Stramonium, 3ss.; Comp. Tincture Cardamom, 3iiiss.; from half to one teaspoonful every two or three hours. If the patient has been in the habit of using Opium, the dose will be larger.

When the disease is persistent, and resists the action of remedies, forcible dilatation of the urethra may be proposed as a radical cure. Usually the patient will have to be placed under the influence of chloroform, when a large bougie or catheter may be passed, followed by one as large as the forefinger; or the finger well oiled may be passed quite as well. The patient is kept in a recumbent position, and full doses of Veratrum are given. The operation is repeated in two or three days, usually without the chloroform.

STRICTURE OF THE URETHRA.

176. This is of very rare occurrence in the female, owing to the large size and great dilatability of this canal. The symptoms of this affection are, a difficulty in micturition, the urine passing in a small stream, and accompanied with pain; when the catheter is passed, the difficulty can readily be detected.

177. *Treatment.*—All the cases that I have seen reported, have

been successfully treated by dilatation, with graduated bougies. The best bougie for this purpose, probably, is the gum elastic, or gutta percha; beginning with one of small size, and gradually enlarging it, until the canal has acquired the proper size. The bougie should be passed beyond the stricture, and retained for ten or fifteen minutes each time, when it will be found that a larger size will be readily admitted the next day. The occasional use of the bougie should be continued for some time after the stricture is removed, to perfect the cure.

OCCLUSION OF THE URETHRA.

178. Occlusion of the urethra is, in general, a congenital affection, and may exist independently of any malformation of the other genital organs. The malformation generally consists of merely a thin membrane, stretched across the orifice of the urethra, though cases have been reported in which the closure affected a larger portion, or even the whole canal. The urethra may be mechanically obstructed by cohesion of the labia.

179. A strict examination should be made, when the napkins of the infant are found not to be wetted with the usual discharge from the bladder, and where, after the meconium has been evacuated from the bowels, the infant still continues to cry and to strain without effect.

180. *Treatment.*—Where the meatus is obstructed by a membrane, it may yield to slight pressure; or if this should not remove it, the membrane may be punctured with a narrow bistoury, keeping the passage open, by the introduction of a small catheter, for two or three days.

Where the obstruction occupies the greater portion of the canal, it has been recommended to puncture the bladder by means of a delicate trocar, which should be introduced at the meatus, and carried along where the urethra should be, until it enters the bladder. Or, if this can not be done, the bladder should be punctured through the vagina. These cases are always dangerous, yet the physician should use such means as would give a probability of relief.

VASCULAR TUMOR OF THE MEATUS URINARIUS.

181. These tumors are by no means of unfrequent occurrence. They may be developed in patients of any age, though they more frequently attack the young, whether married or single.

182. According to Dr. Ashwell, this tumor is generally pediculated and movable, attached to one part of the margin of the meatus urinarius, or just within the urethra. Its two prominent characteristics are, great vascularity and exquisite sensibility. Sometimes these growths are not movable, but appear like several raised coalesced granulations; or, occasionally, two or more isolated and independent ones may be seen near together. Every now and then they extend partly along the urethra, and may even be located at the neck of the bladder. They are covered by a very delicate membrane, which is often broken by being touched during examination, and blood exudes from the soft, feeble, and injected capillaries. They vary in color, from a pale rose tint to the deepest red; they are generally small, not being larger than a pea in most cases, yet in some cases they have been much larger.

183. *Symptoms.*—The symptoms that arise from this, are mainly owing to the extreme sensibility of the tumor. Thus, if it is so situated that the urine comes in contact with it, the act of passing water produces great distress, and this is usually one of the most prominent symptoms. There is also constant pain in the vulva, which is increased by motion; sometimes this pain is accompanied by a sense of weight, the urethra and bladder become irritable, and the frequent desire to micturate is suppressed by the dread of the pain which it excites. Sexual intercourse is intensely painful, and is, therefore, obliged to be suspended. No mistake can be made in the diagnosis, if an examination be made.

184. *Treatment.*—No means that may be made use of, will have the least effect, until the tumor is removed; this may be done by ligature, caustic, the knife or scissors. When the tumor is large, or has a thick base, the ligature would be preferable, from the fact that there is less hemorrhage accompanying it, and less liability of a return of the tumor. The use of the ligature is very painful in these cases, and if the tumor be small, and

attached by a pedicle, the better plan would be to cut them off close to the mucous membrane, with a pair of curved scissors. The urethra should always be dilated and examined, to see whether there is any growth within it; if there is, this should also be removed. Whatever means is adopted for the removal of the tumor, without the base of it is destroyed by caustic, it will rapidly reappear; as soon, then, as the tumor is removed, whether by the ligature or scissors, its base should be destroyed, either by the application of Nitric Acid, or a solution of the Chloride of Zinc, carefully shielding the adjacent parts from injury. This should be repeated, at intervals, until the disposition to reproduction has entirely ceased. It was from this disposition of the tumor to reappear, that Dubois and Cullerier recommended cauterization without excision. Mad. Boivin sprinkles the parts with powdered alum. Where a considerable extent of the mucous membrane of the urethra is affected, Dr. Churchill recommends the application of the Nitric Acid. His means of applying this, is, to take a pointed pencil of soft wood, dip it in the strong nitric acid, and gently put it in the urethra as far as may be necessary; this, though tedious, he has always found effectual. One of our practitioners informed me, that in one case he destroyed the morbid growth in the urethra, by using pulverized Alum and Sanguinaria, equal parts. His mode of using this was to take a tube about the size of a common catheter, fill it with the powder, and carefully introduce it into the urethra, as far as the morbid growth extends; then, as he withdrew it, he pushed the powder out with a small rod made to fit the tube: this covered the entire growth with the powder. The introduction of this excited considerable inflammation, but it was readily subdued by the use of cold applications. Two applications of this powder removed the growth, which has since shown no tendency to return.

185. After removing these tumors, the patient should be kept quiet, and all symptoms of inflammation should be subdued by cold applications and vaginal injections.

FOREIGN BODIES IN THE URETHRA.

186. These consist of substances, which, in some manner, have been introduced from without, and calculi which have passed from the bladder into the urethra. Of the first variety, many different substances have been removed, as parts of a bougie, pencils, pins, pieces of wood, hair pins, etc. It is not necessary here to inquire how these articles gained admission into the urethra, but, how they can be removed with the least injury to the parts. As the female urethra is very dilatable, calculi of considerable size may pass into it. These, by contact with the walls of the passage, produce considerable irritation and spasmodyc contraction, which prevents their further passage. In either of these cases, the patient will so describe her situation, that there can be no difficulty in forming a correct diagnosis. The catheter or sound should be introduced carefully into the urethra, to ascertain exactly the character and position of the obstruction. If this can be ascertained, its removal should be immediately attempted. The best instrument for this purpose is (whether the obstruction is a calculus, or any other substance,) a pair of small polypus forceps; these should be at least two and a half inches long in the blades, so that they may be passed to the neck of the bladder, or into it if necessary. Having oiled the forceps, they should be carefully introduced, using but a gentle degree of force, and passed up until they come in contact with the obstruction. Then, by opening them as much as the urethra will permit, they may be carefully passed up until the offending substance can be grasped. Here considerable care must be used, to prevent the forceps including in their grasp any part of the mucous membrane; if this should be the case, it may be known by the pain it occasions when the forceps are pressed together, and before any retraction is made. Having then obtained a firm hold on the body, it should be carefully and slowly withdrawn, giving sufficient time between the tractions to permit the urethra to dilate for its passage.

187. Should the foreign body be so large, as is sometimes the case with a calculus, that it will not pass without great laceration of the urethra, the forceps should be removed, and means used to relax the parts. This may be accomplished by using vaginal

injections of a decoction of Stramonium, and directing the patient to sit over the vapor of hot water. After it is removed, if much inflammation should arise, it may be subdued by cold applications to the parts.

URINARY CALCULI.

188. It may be well, in this connection, to give a description of the means employed, of late years, to remove calculi from the female bladder.

189. Owing to the great dilatability of the female urethra, calculi are frequently passed, without any assistance, and, probably, this is one of the reasons why the physician is less frequently consulted by women suffering from stone than by men. In proof that the urethra can be dilated sufficient for the passage of almost any sized calculi, Mr. Brown gives the following well authenticated cases. Middleton relates a case where a stone weighing four ounces, was expelled in a fit of coughing, after lodging in the passage for a week. Collet speaks of another instance, where a stone about as large as a goose egg, after lying in the meatus urinarius seven or eight days, and causing retention of urine, was voided in a paroxysm of pain. Dr. Molineaux relates a case in which a woman voided a stone, of which the longest circumference was between seven and eight inches; the shortest (in the thickest parts) five and three-quarter inches.

190. These instances are sufficient proof, that the urethra may be dilated to give passage to any calculus that could be removed by the sub-pubic operation of lithotomy. The objections that have been brought against the practice of dilatation are, *First*, that it frequently takes a long time and gives great pain to dilate it effectually; *Second*, that laceration is liable to occur; *Third*, that incontinence of urine has sometimes followed.

191. As Mr. Brown has fully answered these objections, I shall quote from him. “*First*. The tediousness of the operation and the pain it produces, are objections, the whole force of which has been dissipated by the introduction of anaesthetics into operative surgery; and in this case chloroform has a double claim upon our notice. It not only prevents all pain, but it prevents all tedious-

ness likewise. So long as the patient is conscious, the process of dilatation is rendered difficult and tedious by the contraction of the sphincter fibers of the meatus; but, under chloroform, these fibers are relaxed, and the dilatation can be accomplished easily and quickly. *Second.* The second objection is disposed of in the same way. Laceration can only occur in the walls of this loosely arranged structure, in consequence of the rigidity of the muscular fiber; relax this rigidity by chloroform and the danger of laceration no longer exists. *Third.* Incontinence of urine does not occur after dilatation under chloroform, and I think this may be thus explained. When the dilatation has been a tedious and painful process, it has been accomplished (physiologically) by exhausting the irritability of the fibers, and thus rendering them powerless for the time; or (mechanically) their structure may have given way under tension; or both these circumstances may have occurred; and in either of these occurrences, subsequent imperfect contraction and consequent incontinence, are perfectly explicable. Whereas, under chloroform, there is no wasting or bearing down of the local nervous irritability, nor, as the rigidity of the canal is destroyed, is there any danger of laceration; there is, therefore, no probable cause for incontinence, as a subsequent evil; I state these things advisedly, and after considerable experience, having had frequent occasion to dilate the female urethra, not only in cases of stone in the bladder, but in operating for vesico-vaginal fistula."

192. When, then, a calculus has been discovered in the bladder, the patient should be placed under the influence of chloroform, and the urethra should be dilated, by the use of graduated bougies, until the finger can be introduced; after the finger has been inserted, dilatation can be rapidly effected by it. As soon as the urethra is sufficiently dilated to pass the stone, the forceps should be introduced, and the stone grasped; after it has been grasped, the forceps should be turned round, to be certain that no part of the mucous membrane is included in their grasp; the stone should then be slowly withdrawn, carefully dilating the urethra in its passage.

CHAPTER V.

DISEASES OF THE VAGINA.

OCCLUSION OF THE VAGINA.

193. Occlusion of the vagina may be either congenital, or the result of disease. It may also occur in any part of the canal, or involve it in its entire extent. Congenital occlusion may be due to an imperforate hymen, or to some malformation of the parts, whereby a greater or less extent of the canal is closed.

IMPERFORATE HYMEN.

194. The existence of an imperforate hymen, is not likely to be discovered, until the female has arrived at the age of puberty, and at the commencement of menstruation. At this time it may be suspected, if the female have all the symptoms which precede and accompany the menses, without any discharge of the menstrual fluid; and if these symptoms should continue to recur at regular intervals, accompanied with a sense of weight and fullness in the vagina; and, especially, if an enlargement is discoverable in the hypogastrium, accompanied with great pain and tenderness on pressure. These symptoms always become ameliorated in the course of a few days, but return with increased violence at each successive menstrual epoch. In these cases the cause of the difficulty may be easily detected, by an examination, which should always be requested when these symptoms are present. We may be certain that the obstacle that closes the passage is an imperforate hymen, when we discover between the labia a hemispherical tumor of a livid or bluish color, soft and fluctuating, and rendered salient by the weight of the contained blood. After having ascertained that the obstruction is caused by the hymen, we should next ascertain, as near as possible, its thickness and degree of organization. In the most of cases, the membrane has been

found quite thin, though of considerable strength; in some cases, however, the membrane is thickened and indurated, and from a fourth to three-eighths of an inch in thickness.

195. *Treatment.*—In the case of imperforate hymen, where the menstrual fluid has been retained, forming accumulations in the vagina, uterus, and fallopian tubes, it is recommended, by some authors, to make an incision through the center of the membrane, with a bistoury, or with a trocar, so that the fluid may be gradually evacuated, thus lessening the liability to peritoneal inflammation, which has so frequently occurred when the membrane was entirely removed, and the fluid evacuated at once. As soon as the fluid has been entirely evacuated, the hymen may be divided by a crucial incision, and the flaps clipped off with a pair of scissors. The vagina and uterus should be well syringed out with warm water, and a bandage applied around the abdomen; the patient should be kept quiet, in the horizontal position, until the organs have regained their natural condition. In children, the occlusion may, in general, be very readily overcome without any resort to the knife. The little patient being placed in the lithotomy position, the thumb of each hand should be applied against the obstruction, and with but a small degree of force, the parts may be separated.

196. It is in those cases where the obstruction is of long standing, and where the hymen is thickened and indurated, that the greatest difficulty will be experienced. Two methods of operating are recommended in these cases. The first is to make an incision through the upper part of the hymen with a bistoury, and carefully carry it down in the median line until the entire structure is divided. Great care will have to be used in this operation, to avoid injuring the urethra, bladder, or rectum. A catheter in the bladder, and a finger introduced occasionally into the rectum, will prove valuable guides; as soon as the incision is large enough to admit the finger, the tissues may be broken down with it, or if the bistoury should still be required, it may be guarded by the finger on the inside of the obstruction. Pledgets of lint, saturated with oil or the mild zinc ointment, should be introduced and kept between the cut surfaces until they have healed. If the

orifice should be small, or contract after the operation, it should be dilated by the use of the bougies.

197. The second method of operating is by the excision of the entire hymen. This is recommended by Mr. Baker Brown as the safest operation that can be performed, especially where there is much thickening and induration, diminishing the liability to contraction or adhesion. His mode of operating is to place the patient in the lithotomy position, administer chloroform, and dissect out the hymen by a semi-circular incision on each side, completely removing the whole structure. The parts should be dressed with oiled-lint, and the dressing repeated, from day to day, until the parts are healed. He reports two cases successfully treated in this way, in neither of which was the operation accompanied with much hemorrhage.

197. *Occlusion* may occur at any portion of the vaginal canal, and be of variable extent and consistence. Some cases have been reported, in which there was a small passage connecting the outer portion of the vagina with the internal part surrounding the os uteri; conception occurred, and the obstruction had to be divided before the child could be born. If the occlusion is perfect, and the uterine organs in a normal condition, the same symptoms will be present, as in occlusion from imperforate hymen, and even if there be no symptoms of menstruation present, the difficulty should be removed, if possible, providing that upon an examination per rectum, the uterus should be found in a normal condition.

198. *Acquired occlusion*.—According to Professor Rokitansky, acquired atresia may be complete or incomplete, and result from adhesion of the anterior and posterior walls of the vagina, to a greater or less extent, in consequence of excoriation or ulceration; or it may be produced by flat or rounded cords that pass horizontally or diagonally across the vagina, and reduce its caliber. The latter may consist of vaginal folds, brought on by traction, or of the membranous bands left after the cure of ulcerative loss of substance.

199. *Treatment*.—The treatment of congenital or acquired occlusion of the vagina is more or less difficult, in proportion to

the amount of the canal involved, and the character of the occlusion. Thus, if a large portion of the canal is involved, its restoration will be difficult, and should not be attempted, unless the condition of the patient is such that its restoration is indispensable. So, likewise, where the occlusion has resulted from agglutination of the vaginal walls: the operation will be difficult from the extreme thinness of the structure in which the division has to be made. Having decided to operate, the patient should be placed in the lithotomy position, having first evacuated the bladder and rectum. Chloroform should be administered by one assistant, while the labia are to be held apart by another. After introducing a sound into the urethra, which will enable the operator to distinguish both the urethra and the bas-fond of the bladder; and ascertaining the exact position of the rectum, and as near as possible the extent of the intervening space, the operation may be commenced. In this operation the knife should be used as little as possible, the tissues being broken up by the fingers; where the tissues do not give way to the pressure of the fingers, incisions should be made to a slight depth, making careful examinations per rectum at each incision; thus using the fingers as much as possible, and the knife when the adhesions are too dense to be broken down by them, the obstructions may be removed up to the cervix uteri. The operator should then ascertain that the os uteri is pervious; if it is not, an opening should be made through the canal of the cervix with a trocar or bistoury.

200. If, with occlusion of the vagina, the labia are adherent, they should be carefully separated; carrying the incision from above downward, to the full extent of the external orifice, a free incision being requisite to permit the necessary manipulations to remove the internal adhesions. The question will arise here, Shall the incision be made from above downward or laterally? These questions must be decided by the character of the occlusion. If the occlusion consist of an intermediate substance between the walls of the vagina, and the antero-posterior diameter, or the distance between the urethra and rectum is sufficient for a perpendicular incision; this should be chosen in preference to the other, from the fact of the greater facility of performing the operation.

But if occlusion results from adhesion of the walls of the vagina, the incision will have to be made laterally.

201. If there should be much hemorrhage, it may, in general, be controlled by the application of cold water. As soon as the parts are divided, pledgets of lint, well oiled, should be introduced into the vagina, between the surfaces, and changed daily until the parts are healed. This will not only prevent adhesions between the cut surfaces, but if the vagina is filled, it will prevent contraction of the canal from cicatrization. As this is a very severe operation, where much of the vagina has been occluded, great care will be required in the subsequent treatment, to prevent the inflammation from extending to the adjoining structures, especially to the uterus and peritoneum; to prevent this, rest, absolute quiet, fomentations to the vulva, vaginal injections of tepid water, or water and milk, should be used if necessary, and if symptoms of metritis or peritonitis should present themselves, they must be treated as described under their separate heads.

STRICTURE OF THE VAGINA.

202. Cases in which the vagina is much smaller than natural are not very unfrequent; yet those cases where the constriction is so great as to come under the care of the physician are uncommon. Stricture of the vagina may be either congenital, or arise in some part of the canal as the result of disease.

203. Congenital stricture, or as it is more appropriately named, narrowness of the vagina, is very seldom seen. Cases, however, have been sometimes met with where the deformity has prevented the accomplishment of the purposes for which it was designed by nature. In some of the instances that have been met with the vagina was not more than half an inch in diameter. Prof. Meigs reports a case in which it was with difficulty that the vagina admitted a full sized bougie.

204. Acquired stricture of the vagina is much more frequent than the congenital; it may result from violent inflammation of the vagina, producing cohesion of some part of its walls, or from any cause which would produce thickening and induration of its walls, as the imprudent use of astringent injections in vaginal

disease, etc. It has also been observed to follow protracted and difficult labor, accompanied by sloughing of some portion of the vaginal tissue.

205. *Treatment.*—The treatment of this difficulty, whether it be congenital or acquired, requires patience and perseverance to effect a cure. The means to be made use of, consists in the gradual dilatation of the stricture by means of graduated bougies introduced from day to day, or what would be better, the use of two hollow half cylinders of german silver, which should be introduced into the vagina, thus forming a cylinder; into this may be pressed a conical bougie of wood, thus producing dilatation without the friction attendant on introducing the bougies. These wooden dilators may be increased in size at each subsequent introduction until sufficient dilatation has been produced.

206. Should there be an indurated condition of the parts, the walls of the vagina feeling hard and resisting, emollient injections should be employed, with the use of warm topical-baths.

207. It has been recommended by some authors, to make shallow incisions in the vaginal walls to assist the process of dilatation. This I consider needless, in fact injurious, as more or less inflammation will follow, and prevent the use of the dilatators until the incisions have cicatrized. The knife should never be employed without it is for the purpose of dividing fibrous bands which pass between the vaginal walls, or where the stricture occupies but a small portion of the canal.

208. As these cases of acquired occlusion and stricture of the vagina so frequently follow protracted labor, or where instruments have been used, when followed by inflammation, and sloughing of the vaginal walls, we should never forget the chances of deformity resulting, and should use such means, at the time, as will prevent any of the serious consequences just described.

209. In all such cases, careful examinations should be made from time to time, to ascertain the exact nature of the morbid processes. At first, when the inflammation is acute, emollient injections should be used, together with the application of poultices and fomentations to the vulva, and such other measures as will suggest themselves to the mind of every well-informed practitioner.

As soon as the inflammation has somewhat subsided, pledges of oiled-lint should be introduced between the abraded surfaces to prevent adhesions; this should be followed as soon as circumstances will admit, by a roll of oiled-lint sufficient to distend the vagina, and prevent any contraction that might take place from cicatrization.

ACUTE VAGINITIS—INFLAMMATION OF THE VAGINA.

210. Inflammation of the vagina may be confined entirely to the mucous membrane, or it may affect both this and the sub-mucous cellular tissue. Acute vaginitis is attended with pain, swelling and redness of the vaginal canal. The patient feels a sensation of heat and fullness in the vagina; and if a digital examination be made, the canal is found swollen and tender to the touch. On bringing the vaginal mucous membrane into view by means of the speculum, should the pain and swelling not be too great to admit of its use, it is found of a vivid red color, and the rugæ appear more developed and prominent than in the normal state. At first there is an arrest of secretion, as in the first stage of inflammation in mucous membrane generally; but after a day or two, more or less abundant secretion sets in, at first serous, and then purulent, and of a yellowish or greenish color. As soon as this secretion is fairly established, the heat, swelling, fullness, and pain diminish greatly. The development of these local symptoms is seldom accompanied by much general febrile reäction, unless the sub-mucous tissues become involved; in that case the inflammation may assume a phlegmonous form, and terminate in purulent collections, which empty into the vagina, or at the vulva. Instead of terminating in suppuration, however, it most generally leads to considerable thickening and coriaceous induration of the vaginal parietes; the latter at the same time becomes less movable, so as to seem agglutinated to the adjoining parts.

211. The amount of fluid secreted by the inflamed surfaces varies greatly; in some it is slight, and formed by a mixture of the white mucus, secreted in the upper part of the vagina, and of the yellow matter, the product of the acute inflammatory action;

in others it is very abundant, thick, and of a yellow or greenish color.

212. *Causes.*—Acute vaginitis may arise from cold, which is the most frequent cause; from violence, (as in rape,) excessive sexual indulgence, exertion soon after delivery, high living, etc. The sub-mucous form of the inflammation arises more frequently from injuries of the vagina or parts adjacent; after delivery, either in protracted labors where the head of the child has been long in passing, pressing upon the parts, or what is more uncommon in very rapid labors, where the soft parts have been dilated very rapidly.

213. *Diagnosis.*—It becomes of great importance in some cases to diagnose, if possible, simple vaginitis from *gonorrhea*. The diagnosis here is very difficult, if not impossible in many cases. In *gonorrhea* there is nearly always a greater discharge from the urethra than in simple vaginitis; yet this is not positive, for in some cases *gonorrhea* affects the urethra but very slightly; not as much as in some cases of vaginitis, where the inflammation extends to the urethral mucous membrane, in consequence of the continuity of tissue, involving it to nearly the same extent as the vagina. Probably the observations of Donnè, if they are borne out by future investigations, will furnish the most reliable means of diagnosis. He states that in the *gonorrheal* discharge there are certain *animalculæ*, which may be detected by the microscope, and which are never found in any other discharges from the vagina. These *animalculæ*, he says, may be recognized by the elongated filliform appendix attached to their bodies, and which may be seen in motion if the discharge is recent. Ricord states, that he can distinguish the diseases by the specific character of the erosions on the *cervix uteri*. The glands of the *groin* are also less affected in simple vaginitis than they are in *gonorrhea*. After all, it is probable that the character of the patient and her husband will give the best evidence of the nature of the disease. In some cases where, from the known character of the parties, there could not be the slightest suspicion of *gonorrhea*, the husband has contracted a *blennorrhœa* from connection with his wife.

and which presented all the characteristics of true gonorrhea, and which was amenable to no other treatment than that resorted to for that disease. Such cases as these, and the extreme difficulty of forming a diagnosis, should make the physician very careful how he expresses an opinion in regard to the character of the disease, even if he should be convinced in his own mind that it was gonorrhea.

214. *Treatment.*—The consequences of an attack of acute vaginitis are seldom of much importance, if the disease is treated in time. If it be neglected, narrowing of the vagina, or adhesion of its sides may possibly take place, but if discovered in time, they are easily remedied. If much constitutional disturbance be present, the special sedatives, with such other remedy as may be indicated, should be given and continued until the inflammation is arrested. Especial attention is called to *Rhus* when there is burning pain and acrid discharges; *Macrotys* when there is deep tensive pain in back and hips; *Viburnum* when the pains are pressing down; *Apis* when there is itching and burning; *Pulsatilla* when the patient is depressed and nervous; *Belladonna* when there is incontinence of urine; *Santonine* when there is partial or complete retention, etc.

215. As local appliances in the acute stage, fomentations of *Stramonium* or the flowers of *Arnica*, applied over the vulva, will give great relief; in connection with this, vaginal injections of warm water, or what is better, of a decoction of *Stramonium*, should be used every few hours. A warm hip-bath, occasionally, will also be found a powerful adjunct in abating the inflammation.

216. If there be constipation of the bowels, they should be moved as often as once a day; any agent that is preferred may be used for this purpose. As soon as the acute symptoms have been subdued, if there is still a discharge, accompanied with a lax condition of the vaginal mucous membrane, an injection of *Salicylic Acid* and powdered *Borax* should be used to give strength and tone to the organs, and prevent the disease from running into the chronic form. The decoction of these articles should be made of such strength as will suit the case on hand.

217. In the majority of cases, if these means be made use of in

the early stage of the disease, a perfect cure will result; if not, in all probability it will assume the chronic form.

CHRONIC VAGINITIS—VAGINAL LEUCORRHEA.

218. This is one of the most common diseases to which the female is subject; very few, indeed, escaping attacks of it, at some period of their lives; and this is not surprising, when we consider the many causes of irritation to which this canal is subject.

219. Chronic vaginitis is an important disease, not only on account of the extreme loss of fluids which it often entails, but also on account of its constant tendency to extend to the uterus and the fallopian tubes, and the consequent morbid affections of these organs. It predisposes to intussusception of the vagina, and the displacement of the uterus, owing to the relaxation it induces; it leads to excoriation and superficial ulceration, both of the vagina, the external pudenda, the parts in their vicinity, and of the cervix uteri, to closure of the os tincæ, to follicular suppuration, permanent hypertrophy of the follicles, and dilatation of the vaginal vessels.

220. This disease may be general or partial; it may continue indefinitely, for years, like chronic inflammation of all other mucous membranes, giving rise to a constant secretion of mucus or muco-purulent fluid, and varying in intensity according to the epoch of the month, and to the state of the health and social and hygienic position of the patient. In the course of time, it often passes into a mere mucoso-purulent flux. Its existence, in this chronic form, is a source of general debility and weakness, but by no means to the extent supposed by some authors; the sympathetic connection between the vagina and the rest of the economy being slight, when compared with that which exists between the uterus and the system in general. "When the health of a patient, laboring under chronic vaginitis, suffers greatly, it will be found, on examination, that there is also disease of the neck or body of the uterus or of the ovaries."

221. *Symptoms.*—The symptoms of this disease are a discharge from the vagina, sometimes thin and colorless, but more

frequently white, or of a slightly yellowish cast; as the disease progresses it becomes muco-purulent, and varies in color from a slightly yellowish white to a brownish cast. In the majority of cases, the discharge is of a bland character, producing no excoriation or other difficulty; yet in some few cases it becomes very acrid, excoriating the vulva and other parts with which it comes in contact, and producing in the male all the symptoms of gonorrhea, and sometimes ulceration of the prepuce. There is scarcely ever an increase of heat in the parts, and seldom any pain or tenderness. So long as the disease is confined to the vagina, there is very little constitutional disturbance, though if the discharge is profuse, and has continued for some time, there may be considerable weakness, with pain in the back and loins, loss of appetite, constipation, etc.

222. Upon examination with the speculum, the vagina will appear flabby, its mucous membrane tumefied and pale, invested with a pale thick coating of epithelium, or excoriated or reddened, with enlargement of the follicles, which are surrounded by a vascular ring. Or the follicles may be found ulcerated, forming small aphthous sores; these, however, are generally limited to the lower portion of the vagina. The continuance of the morbid process to the cervix uteri, and to the lining membrane of the uterus, will be considered in the chapter on leucorrhea.

223. *Diagnosis.*—The diagnosis between this disease and gonorrhea will have to be made—if made at all—in the manner described when treating of acute vaginitis. It may generally be distinguished from uterine leucorrhea, by the discharge being unconnected with uterine irritation, by its not increasing before and after menstruation, by the minor degree of constitutional suffering, and by the acrid character of the secretion in vaginitis, which reddens litmus, while the uterine discharge has an alkaline reaction. In many cases, however, and especially where the leucorrhea has continued for some time, the uterine mucous membrane will be found more or less affected.

224. *Causes.*—The causes producing vaginal leucorrhea are various. Thus it may result from an acute attack of vaginitis, from exposure to cold and moisture when the system is enfeebled

excessive sexual indulgence; frequent child-bearing; abortions, from which the patient has only partially recovered; the irritation of a pessary, or stimulant injections into the vagina; displacements, morbid growths, etc. There is one cause of chronic vaginitis that is very rarely referred to, which not only produces the disease in some cases, but which also prevents a perfect cure in many others; this cause is functional or structural disease of the rectum. It has doubtless been noticed by every practitioner, how intractable those cases of leucorrhea are in persons subject to piles, to habitual constipation, with accumulated faeces in the rectum, fissure of the rectum, etc. In these cases, the cause of the difficulty should be first removed before attempting any specific treatment for the vaginitis.

225. *Treatment.*—Much has been written on the treatment of leucorrhea, yet very few authors make any distinction in recommending remedies, in regard to the part from which the discharge proceeds, or the conditions present producing it. As I will give, under the head of leucorrhea, a full description of the various causes producing a discharge from the genital organs, together with the treatment appropriate to each, I will confine myself here to the treatment of chronic vaginitis, independent of other affections.

226. The treatment in this affection consists in the use of both general and topical medication. The general treatment in the first place, should be directed to obtain a healthy performance of all the functions of the system; should the patient be debilitated, the vegetable tonics and iron will be required; should there be torpor of the skin, kidneys, or bowels, these organs should be stimulated to a normal performance of their functions. This will be found to be of the utmost importance, not only in this disease, but in all others accompanied with a chronic discharge; for in these cases, it might be said with truth, that the diseased organ is performing a vicarious secretion, which prevents the normal action of the proper excretory organs, and, to subdue the diseased action, it will first be necessary to provide for this elimination through the natural channels,

227. In the second place, general remedies are employed to

remove the local inflammation, and check the morbid action of the parts. For this purpose many remedies have been used, but to have success the remedies must be selected with reference to the special case in hand. Any of the remedies named for acute vaginitis may be required, the indications there given being sufficient to call for them here. In some cases characterized by more or less uterine pain, pain in the back and thighs, the use of *Macrocytis* with *Pulsatilla* will give good results. The case with sensations of fullness and weight, dragging in the pelvis, etc., may be met by *Hamamelis* and *Viburnum*. When associated with passive hemorrhage, the flow prolonged, recurring too frequently, with pallid transparent skin, it is met with *Carbo veg.*, 2d decimal trituration; and blood-making is promoted by the administration of tincture of Copper. Again, we have cases benefited by the use of iron—tincture of the *Muriate* when the tongue is deep red, iron by hydrogen when it is pallid. *Phosphorus* is indicated by impaired innervation, or if we regard the condition of the parts, full, relaxed and pallid. Want of sexual power or appetite is remedied by the use of *Iodine* and *Nux*, as in the Compound *Iodine Pill* (*Iodine*, *Ext. Nux*, aa. gr. *vj*; *Hydrastin*, grs. *xxx.*; make thirty pills.)

As an injection I like a solution of *Chlorate of Potash* for the simple cases ($5ij.$ to water $Oj.$), with the addition of a small portion of *Sulphate of Zinc*, if the discharge is markedly purulent. *Salicylic Acid* and *Borax* ($aa. 5ij.$ to water $Oj.$) is a most excellent injection, as is a solution of *Phosphate* or *Sulphate of Hydrastis*, ($gr. ij.$ to water $3j.$)

In addition to these a large number of the vegetable tonics and astringents have been used with good success. Among these I may name the *Hamamelis*, and the *Rumex Crispus* with *Quercus*.

Some of our practitioners use the *Hydrastis Canadensis* in combination with the *Statice Limonum*, the *Rhus Glabrum*, or the *Rubus Villosus*; either of which, answer an admirable purpose; not alone from their astringent properties, but also from their tonic effect on the mucous membrane. In some cases, where there is a lax and flabby condition of the mucous membrane, with dilatation of the vessels, hypertrophy of the follicles, or ulceration,

tion, an injection of the Sulphate of Zinc (3j. to 3vj. of water,) may be used with much benefit. Still I would prefer the Salicylic Acid and Borax, as recommended in the first prescription, increasing the quantity as the patient could bear it, until the difficulties were removed.

229. These injections should be used with a female syringe, the patient being in a horizontal position, with the hips elevated. As soon as the injection is thrown in, the external parts should be compressed with a napkin, thus retaining the injection in contact with the vaginal walls, for ten or fifteen minutes. Without these directions are given, the patient will, in all probability, use the syringe in a standing or sitting posture, letting the injection immediately pass away; in these instances, the physician may be surprised, that remedies which he places great confidence in, have produced but little effect, yet, upon inquiry, the difficulty will be found entirely in the mode in which they are used.

230. The treatment after the vaginitis has been subdued, and the discharge stopped, deserves careful attention, for it is probable that there is no morbid condition of the system so likely to recur as this; if the cause of the affection be known, the patient should be cautioned against exposing herself to it. Strict attention to cleanliness should be enjoined, and that unfounded dread of water, which most females have, should be removed, if possible. After an attack of this disease, the patient should be directed to use vaginal injections of cold water, at least once a day; and if there should be a tenacious secretion from the parts, a little Castile soap will not be amiss. This will insure perfect cleanliness, and give tone and strength to the genital organs, and prove a perfect prophylactic against any future attack.

PROLAPSE OF THE VAGINA.

231. This affection is not uncommon, and has very often been taken for prolapsus uteri. It generally occurs in females who have borne children, and who have passed the middle age, though in some few instances, it has been observed in the young, and before marriage. We distinguish three varieties of this affection each of which derives its importance from the displacement of

the viscera connected with the vagina. *First*, prolapse of the anterior wall of the vagina, and of the bladder which lies upon and is closely connected with it. This has received the name of "Prolapsus Vesicæ," or "Vaginal Cystocele." *Second*, prolapse of the posterior wall, accompanied by the rectum, called "Vaginal Rectocele." *Third*, prolapse of the entire circumference of the vaginal canal.

VAGINAL CYSTOCELE.

232. This is the most common form of vaginal prolapsus, and may arise from any cause which has a tendency to weaken and relax the vaginal walls; such as repeated child-bearing, difficult labors, etc. This relaxation of the vaginal wall causes an alteration in the position of the bladder, and, in consequence of this, there is retention of urine, which, distending the bladder, forces it downward into the vagina. The more the bladder is displaced, the greater will be the difficulty in evacuating the urine, owing to the backward curvature of the urethra; and, in consequence of this, there will be accumulations in the bladder, by the weight of which the vagina is stretched still further, and thrust downward and forward; if this continues, complete prolapse or protrusion through the external parts will be the result.

233. *Symptoms.*—The patient complains of a constant weight and pressing down into the vagina, a sensation of uneasiness and dragging down in the lower portion of the abdomen; uneasiness and pain in walking; great difficulty in evacuating the bladder, which sometimes amounts to almost complete dysuria,—the bladder becoming paralyzed from retention of urine, and losing its power of contraction; in some cases, the patients are obliged to replace the bladder before they can complete the evacuation. In many cases, the patients will complain of a burning pain in the base of the bladder, with a sensation of distention, and a constant and torturing desire to pass urine. On examination, there will be found a round, soft, elastic, fluctuating tumor, of a red or bluish-red color, and which is covered by the mucous membrane of the vagina; the finger can be passed into the vagina below the tumor, and the os uteri can be felt behind, nearly in its normal position. The surface of the tumor is smooth and shining when the bladder

is distended ; but, when the bladder is empty, it is thrown into transverse folds. A very unpleasant consequence of this displacement has been pointed out by Dr. Golding Bird. This consists in a chronic inflammation of the bladder, caused by the retention of urine, and, under the influence of this chronic inflammation, the mucous membrane of the bladder secretes so much of the earthy phosphates, and unhealthy mucus, as to render the urine puriform and offensive. Often there is a very considerable mucous discharge from the vagina, which is exceedingly irritating to the labia and soft parts.

234. *Diagnosis.*—This affection may be readily diagnosed from any displacement of the uterus, if the following points are regarded. The tumor formed by prolapse of the bladder, varies in size according to the quantity of urine retained; it may be decreased somewhat by drawing off the urine with the catheter; and if the extremity of the catheter is elevated, its point may be felt in the most depending portion of the tumor. The tumor is soft and fluctuating, and the finger can be passed posteriorly to it up to the os uteri, which will be found in its natural position. It may be distinguished from vaginal rectocele, by the fact that it is softer and fluctuating, and the finger passes into the vagina, posteriorly to it, while in rectocele it can only be introduced anteriorly.

235. *Treatment.*—The treatment of this disease will vary much, according to the state of the parts, and the length of time the difficulty has existed. The indications to be regarded, are, first, to give temporary relief by emptying and replacing the bladder, using some mechanical means to keep it in position ; secondly, to correct the secretions, and subdue any inflammatory action that may be going on in the bladder; and, thirdly, to use such means as will produce a radical cure of the difficulty.

236. To fulfill the first indication, the urine should be drawn off with the catheter, elevating the depressed portion of the bladder, so as to remove it entirely, or if the patient can empty the bladder herself without the use of the catheter, it will be better. The main point should be to entirely empty the bladder, leaving no urine in the prolapsed part, to keep up irritation ; this should be done very frequently. The prolapsus may be very

easily returned when the bladder is empty. To retain it in its position, a small India Rubber bag, inflated with air, and retained with a perineal bandage, will be found to be much better than any of the hard pessaries recommended. This, by being elastic, molds itself to the parts, admits of perfect freedom of motion without pain or inconvenience; produces but very little, if any irritation, and does not produce dilatation of the canal, and yet furnishes a perfect support to the bladder. This pessary should be removed twice a day and cleaned, a vaginal injection of a decoction of *Hydrastis Canadensis*, *Rubus Villosum*, and *Statice Limonum*, equal parts ($\frac{3}{j}$ to Oct j of water) should be used at these times. With this treatment, if the irritation of the bladder has been subdued, as I have recommended below, many cases, especially those of recent date, can be perfectly cured.

237. The irritation or low degree of inflammation of the bladder, that often exists, will be found to be one of the most troublesome complications of this disease, and without this is removed, a permanent cure is impossible. I have already stated that the bladder should be frequently and entirely evacuated, to prevent the irritation which the retained and decomposing urine would produce, as well as to remove the weight which was continually pressing upon the relaxed walls of the vagina; this point in the treatment is so important that it will bear repetition. To subdue the irritation and give tone to the mucous membrane of the bladder, I would recommend the muriated tincture of Iron and the *Eryngium* given in the usual doses. If the urine should become muco-purulent and fetid, the following injection should be thrown into the bladder.

R *Hydrastis Canadensis*, $\frac{3}{j}$.

Aqua Bullientis, Oct j .

Let it stand until it is cold, then strain and inject one-third of it into the bladder once a day. This may increase the irritation in some cases the first few times that it is used; if it does, its use should be suspended for three or four days until the irritation has subsided, and then commence its use again. If there is mucus secreted of aropy or fetid character, it will be well to alternate

this injection with one of an acid character, as distilled Vinegar $\frac{3}{5}$ ss to $\frac{1}{2}$ j of water; of this, one or two ounces should be used at each injection. Dr. Newton informs me that he has used with much success, an injection of Glycerine, throwing into the bladder from half an ounce to an ounce through a catheter. This forms a very soothing and healing application to the inflamed bladder.

238. In all recent cases, and indeed in some of long standing, the measures above recommended will effect a permanent cure if the general health be good, but there are some in which they will give but temporary relief. In these cases there will be found great laxity of the tissues, a flabby and dilated state of the vagina, weakness of the perineal muscles, and often an enlarged pelvis, and extreme thinness of the perineum. Different measures have been recommended in these cases to remove the difficulty. Some have recommended plugging the vagina with pessaries, made especially for that purpose; others, the introduction of a soft sponge, cut in the form of a pessary, and saturated with some astringent solution; or a sack made of soft cotton or linen cloth in the form of a pessary, and filled with some astringent substance. It is certainly obvious that these measures will do no more than give temporary relief, while they are very liable to produce irritation, and by keeping the vagina distended ultimately increase the diseased condition. Other authors recommend surgical measures to decrease the size of the vagina, and thus relieve the difficulty. M. Jobert, of Paris, incloses within two curved lines an oval space, more or less considerable in the posterior surface of the tumor, or the anterior surface of the vagina, by means of caustic, until it forms an isolated spot, repeating the application of the caustic until the mucous membrane is destroyed. He then pares the edges with scissors or a bistoury, draws them together and maintains them in apposition by means of straight needles (the points of which are removed) and a twisted suture. This operation consists in contracting the anterior wall of the vagina and thus forming a support to the bladder. He reports the operation as successful in three cases.

239. There can be no doubt but that this operation would prove successful in those cases where the difficulty depended on a lax

and dilated condition of the vagina; but where it was dependent on weakness of the perineum, it would probably fail. The operation of Mr. Baker Brown appears to me to fulfill all the indications of the case. He operates for this difficulty in the same manner that he does for ruptured perineum; dissecting off a longitudinal slip of mucous membrane, about an inch and a quarter

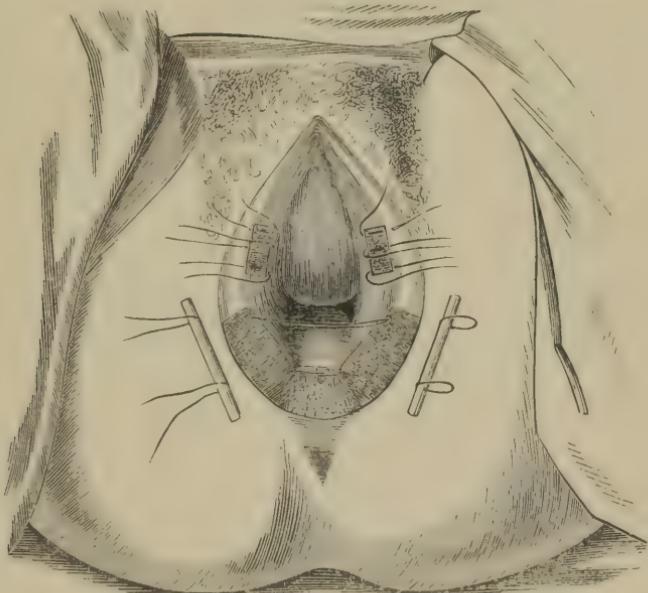


FIG. 12.—OPERATION FOR PROLAPSE OF THE VAGINA.

long and three quarters of an inch broad, just within the lips of the vagina; the upper edge of the denuded part being on a level with the meatus urinarius. The edges of the mucous membrane are then brought together by means of interrupted sutures. He then dissects the mucous membrane from the posterior portion of the vaginal orifice, and brings the denuded parts together by means of the suture. (For further particulars of this operation see ruptured perineum.) By these means the vagina is not only contracted above, but the perineum is greatly increased in thickness and strength, forming a firm support to the pelvic viscera.

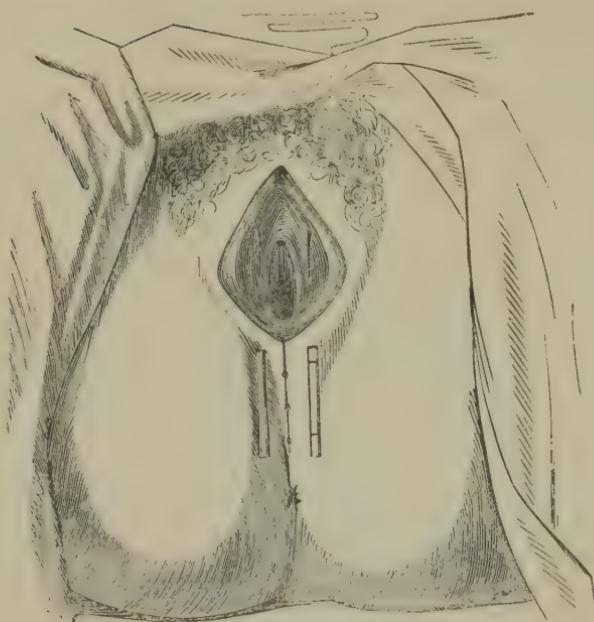


FIG. 13.—CONDITION OF THE PARTS AFTER THE OPERATION IS COMPLETED.

Prolapse of the bladder may occur during parturition, and may attain such a size as to prevent delivery of the child. This has occurred in several instances, in some two or three cases of which, the bladder was ruptured in consequence of the pressure of the child's head against it. In these cases the bladder must be emptied by the catheter, and then replaced; it will be found impossible, in the majority of cases, to introduce the common silver instrument, owing to the great degree of curvature of the urethra, and a gum-elastic catheter should be used in its stead. If the bladder can not be evacuated by the catheter, the most depending portion of the tumor will have to be punctured with a trocar, and the bladder emptied through the canula.

VAGINAL RECTOCELE.

240. Prolapse of the posterior wall of the vagina is not of as frequent occurrence as prolapse of the anterior; yet it can not be

called an unfrequent affection. The mechanism of this displacement is similar to that of vaginal cystocele; the posterior wall of the vagina becoming relaxed, the rectum is distended with faeces and pressed anteriorly and downward into the vaginal canal. The size of the tumor varies, from a slight projection into the vagina, to the extension of it into a tumor projecting between the labia. In its more aggravated form the uterus is generally involved with it, being dragged downward and displaced.

241. *Causes.*—The principal cause of this displacement is habitual constipation, giving rise to a constant accumulation in, and distention of the rectum. This undue stretching of the rectum, by local accumulations, brings about a relaxed and loose condition of its tissues; and the same cause stretching the parieties of the vagina, produces a looseness of that canal. This is greatly increased by the use of drastic cathartics so often taken in these cases. It may also be occasioned by an enlarged or displaced uterus, which by its pressure upon the rectum, prevents its evacuation and consequently gives rise to fecal accumulations, and distension of the rectal and vaginal walls. It may also be caused by an entire or partial rupture of the perineum, the sphincter muscle remaining entire. In these cases the rectum has lost its support anteriorly; there not being sufficient power in the perineum to antagonize the action of the sphincter, the anterior part of the rectum is forced into the vagina until it meets with sufficient resistance to overcome this contraction.

242. *Symptoms.*—The general symptoms are much the same as in the other variety of prolapse, weight in the vagina, an uneasy and dragging sensation in the abdomen, uneasiness and pain in walking, habitual constipation with difficulty in passing the faeces, a mucus discharge from the vagina, etc. If there is much displacement, there will be tenesmus, with a frequent desire to evacuate the bowels, generally fruitless and accompanied with much pain. It will be noticed that the tumor increases in size when the faeces have not been passed for some time, and during defecation, and that it decreases in size after this.

243. On making an examination, a globular tumor will be found occupying the cavity of the vagina, compressible but not fluctuating.

ing, and through the walls of which seybalæ may often be felt. By passing the finger over the tumor, it will be found to be covered by the mucous membrane of the vagina, and that the finger can be passed anterior to it, up to the cervix uteri. By making an examination per rectum, the finger can be passed into the tumor so as to be felt at its projecting part in the vagina.

244. *Diagnosis.*—From what I have stated above, I should not suppose it possible that there could be a mistake in the diagnosis, yet it can do no harm to repeat. This may be diagnosed from vaginal cystocele, by its greater hardness, and the absence of fluctuation, from the fact that the finger passes anterior to it in the vagina, and that it diminishes after fecal evacuations. From any displacement of the uterus, by the results of a rectal examination, by the variable size of the tumor owing to retention or evacuation of the faeces, and by the fact that the finger can be passed above it, so as to discover the os uteri in situ.

245. *Treatment.*—The treatment of this variety of vaginal prolapse should be the same as that recommended for the first variety, so far as the local applications to the vagina are concerned, the same kind of a pessary, as there recommended, will be found to be well suited to these cases; the perineal bandage, however, should be so applied as to furnish a constant and efficient support to the perineum.

246. If a cure is effected in these cases without a surgical operation, it will have to be accomplished by strict attention to the state of the rectum. Constipation of the bowels being the producing cause in the majority of cases, and which, as long as it remains, will prevent any permanent improvement. This may be overcome by the use of injections and mild laxatives; all cathartics of a drastic character should be sedulously avoided. After the bowels have been evacuated by an injection, much benefit may be derived from a second injection into it of the astringent decoction used for the vagina.

247. In all cases of this disease it will be proper to make an examination of the rectum, to ascertain the condition of the mucous membrane, and whether any structural lesions exist, as hemorrhoids, fissures, ulceration, and especially, whether it is

compressed by an enlarged or displaced uterus. If either of these complications exist, they will have to be removed by appropriate treatment.

248. In the early stage of the disease, or where the prolapse is not large, this treatment, if perseveringly pursued, will generally give permanent relief. But where the prolapse has existed for some time, attended with great laxity of the tissues, and deficient strength of the perineum, recourse to surgical measures should not be delayed. The object of an operation in these cases is to increase the thickness of the perineum, and thereby enable it to resist the action of the diaphragm and abdominal muscles in defecation, and to contract the too capacious vagina. For this purpose the operation last recommended for vaginal cystocele should be employed, omitting the anterior denudation and sutures. By this operation the perineum is thickened and rendered capable of supporting the rectum, and the cavity of the vagina is likewise diminished in size.

PROLAPSE OF THE ENTIRE CIRCUMFERENCE OF THE VAGINA.

249. This form of displacement is very rare, and occurs as the result of great laxity of the lining membrane of the vagina. In its mechanism it resembles prolapsus ani; the mucous membrane and the cellular tissue beneath it being extremely lax, this cellular tissue gives rise to a morbid thickening of the mucous membrane, which so increases its weight, that it overcomes the resistance at the outlet, and prolapse is the consequence. Prolapse of the vagina may be either partial or complete; in partial prolapse the mucous membrane merely forms a prominence within the os externum; while in complete prolapse, the mucous membrane forms a circular tumor of variable size, which projects beyond the vulva. Several cases are reported where the tumor projected from three to five inches beyond the vulva.

250. *Symptoms.*—The symptoms of this affection vary according to the amount of displacement; thus in slight cases, where the tumor does not project beyond the vulva, the symptoms will be slight; as a feeling of weight and uneasiness in the lower portion of the vagina, a dragging sensation in the lower portion

of the abdomen, etc. In the more severe forms of the disease these symptoms become greatly aggravated; there is a discharge of puriform mucus, obstinate constipation, difficulty and pain in passing the urine, etc. The action of the urine on the tumor, and the friction produced by exercise, gives rise to excoriation, and often to inflammation. On examination, the tumor will be found to have a circular form, arising from the entire circumference of the vagina, and having an aperture in its center. On passing the finger up external to the tumor, it will be stopped in the cul-de-sac formed between the tumor and the vagina; but by introducing the finger through the central orifice, it will pass up to the os uteri.

251. *Diagnosis.*—It may be distinguished from any displacement of the uterus, by the character of the central opening, and by the fact that the finger can be passed up through this, and the os uteri felt above.

252. *Treatment.*—As this affection occurs for the most part, in persons of a feeble and broken down constitution, such means should be employed as will restore the general health. Where the prolapse is slight and of recent origin, it will be found that this, with the use of vaginal injections of cold water, will remove the difficulty. Where the tumor is larger, it will be necessary to replace it and keep it in position by means of the pessary, before recommended; here, also, the vaginal injections recommended in the other two varieties of prolapse should be used. If these measures should fail in giving relief, and the patient be passed the age of child-bearing, it would be proper to resort to surgical measures for the relief of the difficulty. The operation proposed by Dr. Dieffenbach for the permanent relief of the prolapse, consisted in replacing the tumor, and then excising, by means of the forceps and scissors, all the loose folds of the inner surface of the labia pudendi. This operation, which is easily performed, should be so conducted, that the folds, as they are removed, constitute so many radii converging to the center of the vagina, so as to allow the upper end of each one to terminate about one inch within the orifice of the canal. The final treatment consists in merely cleansing the parts once a day. As the cut surfaces cicatrize,

they will contract the orifice of the vagina, and thus furnish a sufficient support to the parts. The same end may be accomplished by denuding a sufficient portion of the vagina of its mucous membrane, and bringing the cut edges of it together and retaining them with sutures.

When the prolapse has been of long standing, and the tumor has become irreducible, it may give rise to so much inconvenience that the patient may insist on its removal. This has been successfully accomplished in some cases, yet it is a dangerous operation, and should never be undertaken unless absolutely required. In deciding on this extreme measure, the operator should satisfy himself positively that the rectum, bladder, and uterus are not involved in the displacement.

TUMORS, MORBID GROWTHS, ETC.

253. According to Prof. Rokitansky, the occurrence of tumors or morbid growths in the vagina is very unusual. The cysts that are met with in this region are developed in the cellular tissue external to the vagina, and, anatomically speaking, bear a very subordinate relation to the latter.

Fibroid productions almost invariably coexist with similar growths in the uterus; they may be developed in the external fibro-cellular layer of the vaginal parieties, and especially at their posterior surface; they then project with a larger or smaller segment in the shape of round tumors into the vaginal cavity. In other instances they are developed in the cellular tissue, that is interposed between the vagina and rectum, and though in close relation to the vagina in point of origin, project chiefly into the rectum, and more or less obstruct its inferior portion.

Warty tumors are sometimes developed from the vaginal mucous membrane, oftener, perhaps, as the result of syphilis than from any other cause. The character and size of these excrescences vary greatly, though they generally resemble the warty tumors of the vulva. These tumors are generally found in the external or vulvar portion of the canal.

254. *Diagnosis.*—Encysted tumor of the vagina may be distinguished from vaginal enterocèle, by its more circumscribed form.

and from the fact that coughing produces no enlargement in it. From other diseases of these parts, by its circumscribed form, its consistence, and by the fact that its exact location can be discovered, by an examination by the rectum or by a sound introduced into the bladder.

Fibrous tumors of the vagina are of very rare occurrence, and their diagnosis may be effected by the means already pointed out all that is necessary is to trace out their exact size and location, and the fact that no other disease of the genital organs exists.

255. *Treatment.*—The treatment of encysted tumors of the vagina is the same that was recommended for the same disease of the labium: make an incision into the tumor, evacuate its contents, and use injections of Sesqui-Carbonate of Potassa, to destroy the morbid function of the cyst-wall.

Fibrous tumors, when they exist in the vagina of sufficient size to produce an obstruction, will have to be removed with the knife. The same precautions should be used in affecting this, that was mentioned in describing the operation for occluded vagina, to prevent wounding the bladder or rectum, or opening through the sides or upper portion of the vagina into the pelvic cavity.

Warty tumors may be removed in the manner before described, —removing them with the ligature or knife, and destroying their base with caustic.

CANCER OF THE VAGINA.

256. “Carcinoma of the vagina is, in most cases, cancer of the uterus, which has spread to the vagina; it may exist when the latter is in a very undeveloped state, and even without it, in the shape of primary carcinoma of the vagina. It belongs to the fibrous or medullary variety, and, in proportion to its growth, induces thickening of the parieties, tuberculated condensation of internal surface, and corresponding contraction of the passage. The vagina becomes adherent to the neighboring parts in consequence of cancerous degeneration of the cellular tissue, surrounding it and the rectum, and, finally, cancerous ulceration and excrescences are established. The greater part of the vagina generally becomes involved, and sometimes the lower portion of it becomes prolapsed. In time, the disease extends to the rectum,

the urethra, the bladder, and, if the uterus was not primarily involved to it, by the pressure it exerts, it causes retention of the urine and dilatation of the bladder, and, when it has reached the ulcerative stage, recto and vesico-vaginal fistula frequently exist."

257. Cancer of the vagina is generally more painful than the same affection of the uterus, owing to the greater sensibility of this canal. The peculiar darting, twisting pain of this affection will be felt at the seat of the disease,—coming on and going off suddenly; at times extending to the perineum, down the inside of the thighs, and sometimes in the course of the sciatic nerve, as far down as the knee. The pain in the back is usually more severe than in any benign affection of the uterine organs. Upon making an examination, the diseased part will be felt rough and uneven to the touch, and the mucous membrane wrinkled and of a leaden or purplish color; or, if ulceration has commenced, the diseased mass will present a fissured appearance, more or less elevated above the surrounding tissues, of a dark-red or purplish color, from which is discharged a thin fetid and excoriating fluid.

258. *Diagnosis.*—Cancer of the vagina may be distinguished from any other disease, first, by the character and intensity of the pain,—benign tumors of this canal being rarely painful; by the shape, consistence, and color of the tumor,—no other tumor presenting the same shape; condensation of the adjoining tissues, or the peculiar dark-red or leaden color. But supposing the points above-named are not sufficient to distinguish scirrhus of the vagina from other morbid growths, whenever the affection presents these symptoms, its removal is necessary, even if it be not cancer,—the mere matter of furnishing a name to a disease being of little importance.

259. *Prognosis.*—The prognosis of cancer depends upon its size, the amount of tissue involved, its position, affection of neighboring organs, the bladder and rectum, and, especially, whether the disease is a primary affection of the vagina, or has extended to it from the uterus, or whether the uterus has become secondarily affected. If the disease is primary, circumscribed, involving neither the rectum, bladder, nor uterus, our prognosis should be favorable. If, however, it involves a large portion of

the vagina, extending to the rectum, bladder, or uterus, or arises, as it very commonly does, from a primary affection of the uterus, the prognosis is unfavorable; especially if the disease has become constitutional by the absorption of cancerous material, producing enlargement of the lymphatic glands, general debility, or the same affection in any other portion of the system.

260. *Treatment.*—Cancer of the vagina, unless situated near the vulvar orifice and on the posterior wall of the vagina, does not admit of any operation for its removal with the knife, owing to the thinness of the vaginal walls, and the danger of wounding other parts contiguous. If, however, it is situated near the perineum, where sufficient space exists for performing excision, this may be resorted to preparatory to the means hereafter recommended.

261. As the entire removal of the cancerous growth is necessary to effect a permanent cure, the exact extent of the disease should be ascertained. Our main dependence in its removal, is in the application of such caustics to the diseased mass, as will destroy every vestige of it, and keep up the suppurative process, until the entire action of the parts is changed. For this reason the potassa fusa and chloride of zinc, have been found the most successful agents. The caustic potassa is preferred by many, from the fact that its action upon the tissues can be readily checked whenever desired, by the use of the vegetable acids. In making use of the caustic potassa, it should be applied to the entire surface of the diseased mass, destroying it as much as possible at each application. The best means of using the potassa, is to place a stick of it in a common caustic-holder; introduce the cylindrical glass speculum, so that the cancer will be brought fairly against the extremity of it, and then apply the caustic, rubbing it strongly against the part, until as much of it is destroyed as possible. As soon as the speculum is withdrawn, injections of vinegar and water should be used to neutralize the action of the potassa, and prevent it from injuring the sound tissues.

262. The chloride of zinc may be used in these cases, by taking a saturated solution of it, and mixing with it enough

pulverized *ulmus fulva* to form a paste; spread this on a piece of soft leather the size of the morbid mass, and apply it through a bivalve speculum. This should be allowed to remain for half an hour to two or three hours, keeping the vagina distended with the speculum. When the plaster is withdrawn, we may restrain the action of the chloride of zinc, by using injections of a solution of carbonate of soda.

263. In place of these, the *painless* cure with Arsenic is many times employed. The form usually adopted is—℞ Hydrated Sesqui-oxide of Iron, q. s.; throw it on a filter and allow the water to drain off until it has the consistence of an ointment; to this Arsenious Acid may be added in the proportion of grs. xx. to $\frac{3}{4}$ ij. to the $\frac{3}{4}$ j. It is continuously applied until the diseased structure is destroyed. When the cancer is incurable, we use Carbolic Acid and Glycerine of such strength as gives the greatest relief from pain.

VESICO-VAGINAL FISTULA.

264. By this we understand the existence of an unnatural opening between the bladder and the vagina, through which there is an involuntary passage of urine. There is probably no disease to which females are liable, that is more intractable and distressing than this; the constant escape of the urine obliges the patient to confine herself at home, or to use such appliances as will prevent the escape of the urine. The passage of the urine through the vagina, produces a continuous irritation of the mucous membrane and of the vulva, excoriation, pruritus, etc. The attendant suffering is modified by the position and size of the opening; thus, if it be but small and toward the outer extremity of the vagina, it will be but mild in comparison with those cases, where the opening is large, and situated in the upper part of the vagina. In these last cases, the urine can not be retained for a moment; for as fast as it is secreted, it passes down the sides of the bladder and escapes. This continuous escape of urine produces such an offensive urinous odor, that the patient is debarred from society and becomes an object of disgust to her friends and attendants.

265. *Causes.*—The most frequent cause of vesico-vaginal fistula

is the long impaction of the head of the child in the pelvis during labor, the anterior parieties of the vagina being subjected to long continuous pressure, may be the seat of inflammation, which may terminate by sloughing or ulceration, and perforation.

2d. By the careless or improper use of instruments to effect delivery.

3d. The long continued presence of a pessary in the vagina, inducing inflammation, ulceration and perforation.

4th. Retention of urine during labor, or the presence of a calculus in the bladder at the same time, will generally involve more or less pressure, giving rise to subsequent inflammation and perforation. Retention of the urine, if it be excessive, causing the bladder to project into the pelvis so as to be pushed before the head of the child, will most probably prevent delivery, and occasion rupture of the bladder.

5th. Vesico-vaginal fistula may result from venereal ulcerations, cancer of the uterus, or vagina, etc.

266. *Diagnosis.*—The detection of vesico-vaginal fistula, in many cases, requires considerable care. Whenever this sad condition is suspected, a careful examination of the vesico-vaginal wall should be made, by passing a sound into the bladder, turning its point downward, so that it may be felt by the finger of the other hand introduced into the vagina, and thus with the finger against the sound, examine the entire extent of the base of the bladder. If there be an opening, the finger will come in contact with the sound at some point or other. The vagina should be carefully examined with the speculum, in order to detect the character and position of the opening; probably the best instrument for this purpose is the cylindrical glass speculum; introduce it to the cervix uteri; turn its beveled side upward, and as it is withdrawn, the entire anterior wall of the vagina will be brought fairly into view; the reflective power of this instrument, enabling the physician to detect the slightest change of structure.

267. Dr. Ashwell strongly urges the importance of immediate attention to the difficulty. He says: "When it is known, that laceration of parts has occurred during parturition, the involuntary and immediate escape of the urine can scarcely be attributed

to a wrong cause; but it is quite possible that incontinence of urine of some weeks continuance, may be produced by contusion of the neck of the bladder, by which its relative power may have been partially paralyzed; still, after instrumental labor, especially where the necessary assistance has been too long delayed, I am always glad; when the first twelve days are over, as then, we may feel pretty confident, if the urine passes naturally, that the bladder and urethra have escaped that dangerous pressure, which so often results in gangrene, slough and fistula.

268. It need, therefore, scarcely be urged, if there be any suspicion of laceration, that the fact should be ascertained as soon as possible. The circumstances attendant on recent parturition, are all comparatively favorable to cicatrization. The vagina is relaxed and capacious; and owing to the weight and size of the uterus having as yet prevented the return of the parts to their usual height in the pelvis, any wound of the urethra or vagina will be far more easily seen, and effectually treated, than when the edges of the perforation have become separated and completely cicatrized. Often have I had to regret, in my hospital cases, the effects of a neglect so long protracted, as to allow not only complete cicatrization, but adhesion also, of the torn edges, to the neighboring parts. In several of these instances, the urethra had entirely ceased to convey away any urine at all, and the vagina had become so exceedingly contracted, as at once to show the utter uselessness of remedial measures. It is right to state, notwithstanding the unfavorable aspect presented by most of these cases, that far more has been occasionally effected, than even the most sanguine practitioner could have hoped."

269. *Treatment.*—The results of treatment in effecting a cure, will depend much upon the situation, size, direction and duration of the fistulous opening. Whatever mode of treatment is adopted for the relief of the difficulty, it should be preceded by such measures as will restore the general health, if affected, and correct any diseased condition of the genital organs, which would interfere with the success of the attempts that may be made, to close the fistulous opening.

270. The methods that have been employed for the treatment

of these fistulas, are: 1st. The palliative method. 2d. Desault's method, or the use of the tampon. 3d. Cauterization, either with, or without approximation of the edges of the fistula. 4th. Suture. 5th. The use of special instruments for the approximation of the edges of the fistula. 6th. The restitution of the part by anaplasty.

271. *Palliative Method.*—This is employed where the loss of substance is so great as to preclude the possibility of a permanent cure, or in those cases where some necessarily fatal disease exists either in the uterus or its appendages, or of some other portion of the system.

The means to be employed in these unfortunate cases, consists in a strict attention to cleanliness, the frequent use of emollient injections to counteract the irritating effects of the urine upon the vaginal walls, and the use of some means to prevent the constant escape of the urine. For this last purpose, many contrivances have been used, and yet very few of them have proved sufficient to completely relieve this inconvenience. Probably, the best apparatus for this purpose would be a gum-elastic bottle of sufficient size to hold the secretion of six or twelve hours; the neck of this should be of sufficient size to fit close to the walls of the vagina, and of sufficient thickness to cause a continuous pressure against them, and thus prevent the passage of the urine down the sides of the bottle. This apparatus can be supported by a perineal bandage; it should be frequently emptied, and carefully cleaned each time, especially the vaginal portion, to prevent irritation and excoriation of the parts. The use of fine sponges introduced into the vagina, or applied to the vulva and frequently renewed, will also be found a useful means of relieving this inconvenience.

272. *Desault's Method.*—This consists in keeping a catheter permanently in the urethra, and plugging the vagina with a cylinder of lint, linen or gum-elastic, and thus divert the discharge from its unnatural channel, and allow this to close up. Several authors report cases of cure by these means. This method requires from six to ten months to effect a cure, even when it is successful, and in many cases the retention of the catheter for this

length of time, is entirely impracticable, owing to the irritability of the bladder and the urethra.

The apparatus made use of, by this surgeon, to retain the catheter in the urethra, consisted of a spring truss, which had attached to it a steel plate, which rested on the mons veneris; to this plate was attached a small curved rod, which passed downward over the vulva, and terminated opposite the meatus urinarius in a perforation to receive the catheter; which, after being introduced, was attached to it. The edges of the fistula were brought in apposition as much as possible, by the vaginal tampon. This method, with the following modifications, might be used with success in some cases of transverse fistula. 1st. The edges of the fistula should be freshened, either with the knife or by cauterization, in order to promote speedy adhesion. 2d. The vaginal tampon should not be large enough to produce much distention of the vaginal walls: an India rubber bag, distended with air, would probably answer the purpose better than any thing else, as it adapts itself to the shape of the vagina; before this is introduced, the edges of the fistula should be brought together by elevating the perineum, and pressing the uterus and bladder downward. 3d. A compress should be applied over the hypogastrium, to keep the pelvic contents depressed, and a perineal supporter worn to elevate the perineum, and in this manner to keep the edges of the fistula approximated. 4th. Perfect quiet, in a reclining position, should be enjoined, until the fistula has closed.

273. *Cauterization.*—This method has proved successful in the hands of many surgeons, yet like all other measures proposed for the relief of this difficulty, the failures have been much more numerous than the cures. The beneficial effects of cauterization in effecting the closure of these fistulas, may be ascribed, 1st, to the freshening of the edges of the fistula, and thus placing them in a condition favorable to their cohesion; 2d, to the deposition of coagulable lymph, the effect of the inflammation excited, which causes a thickening of the edges, and by the contraction of the new deposit, which resembles a cicatrix, they are approximated, either entirely closing the opening, or considerably lessening it. Cauterization, to be successful, should be restricted to those cases

in which the fistulous opening is small, as in cases where the perforation is large it will surely fail.

274. According to Velpeau, this is one of the best means which have been tried up to the present time. (Ope. Sur., 1847. Vol. II., p. 855.) Used to the extent of irritating and of inflaming the tissues to a sufficiently intense degree, without effecting their mortification, it produces an engorgement and intumescence which closes up or contracts, at least for the time being, the opening which we are desirous to heal up. After the subsidence of the engorgement, the exhalation and suppuration are accompanied with a manifest tendency to coarctation. This, therefore, is a method which deserves all the attention of the practitioner, and one which appears to be especially calculated to succeed, where the perforation has but little extent. The cauterization is effected by means of the actual Cautery, or Nitrate of Silver. The incandescent Iron has the advantage of acting with more rapidity and with greater energy. Unfortunately, it exposes to the risk of forming an eschar, and of destroying the tissues which we only wish to inflame. The Nitrate of Silver is generally preferable, and the actual Cautery ought not to be substituted in its place, except in some particular cases; as, for example, when the borders of the fistula are callous, or can not be inflamed without too much difficulty."

275. In applying the Nitrate of Silver to the edges of the fistula, a fenestrated speculum should be used, which will leave the upper surface of the vaginal canal exposed; then, by fastening a piece of the stick Nitrate of Silver to the extremity of a pair of dressing forceps, by means of a thread, so that it will form a projection at right angles, to the border of the instrument: the entire circumference of the opening may be easily cauterized. The caustic should be lightly applied as the object is not to produce a slough, but to excite a sufficient degree of inflammation to produce effusion, and subsequent contraction. Much care should be used to bring the caustic in contact with the entire thickness of the vesico-vaginal wall, for if but the vaginal portion was touched, leaving the vesical edges uncauterized, there would be no hope of a successful result. If much pain should follow the

application of the caustic, it would be well enough to use one or more vaginal injections of warm water, or place the patient in a warm hip-bath. A catheter should be allowed to remain in the urethra, if it does not produce irritation. The patient should be placed in bed, and kept perfectly quiet, to prevent the breaking up of any adhesions that may form. This operation may be repeated as often as may seem necessary, providing the patient is benefitted by it; allowing the irritation to subside each time before again resorting to the caustic.

276. *Suture.*—This method has long been known, and practiced by the profession, with variable results. In many cases, it has proved entirely successful; in others, and probably the majority of those operated upon, it has failed. In order to succeed in closing the fistula by the suture, it is necessary, 1st. That the edges of the fistula should be entirely freshened, so that they may unite by first intention. 2d. That the sutures should perfectly approximate the edges. 3d. That they should retain them in apposition, until the union is complete.

277. Probably one of the most difficult parts of this operation is freshening the edges of the fistula, especially where it is situated in the upper portion of the vagina. To accomplish this, we might use the scissors—straight or curved—and a small scalpel; holding the edges with a pair of forceps having a movable joint about an inch from their extremity, so arranged that they can act in every direction, and be applied to any portion of the opening. If the fistula is longitudinal, these instruments will be entirely sufficient. The posterior angle of the fistula should be divided, for one or two lines, with the scissors, and the anterior angle the same distance with the scalpel; then, by holding the edges with the forceps, they may be trimmed off for about a line, either with the scissors or a scalpel. In the transverse fissure these instruments may be advantageously replaced with the cutting forceps of Colombat. These forceps are made like those above-described, with their extremities movable; one of them terminating by a small leaden plate, intended to sustain the edges of the fistula, while the other has upon it a sharp, cutting edge. With this instrument the edges of any fistula can be accurately trimmed.

278. The suture best adapted to approximate the edges of the fistula, and to retain them in apposition, is that used by Dr. Sims, which he calls the clamp-suture. It is formed of annealed silver wire, about the size of horse-hair, which, being passed through the edges of the fistula, are fastened to cross-bars, like the quilled suture. These cross-bars are also silver, or lead highly polished, and pierced with as many holes as there are ligatures to be applied. These ligatures, after being introduced, are passed through the perforation of the cross-bars, drawn sufficiently tight to approximate the edges of the fistula, and then fastened by slipping a perforated shot over the wire and compressing it at the cross-bar. Dr. Sims states that this suture, properly applied, never ulcerates out, having always to be removed. It may be allowed to remain as long as ten days after scarifying the edge of the fistula.

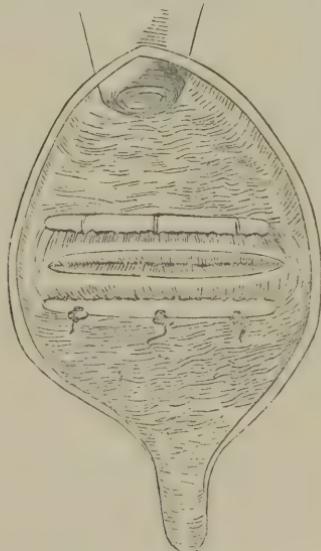


FIG. 14.—OPERATION FOR VESICO-VAGINAL FISTULA. SHOWING THE APPROXIMATION OF THE EDGES OF A TRANSVERSE FISTULA BY MEANS OF THE CLAMP SUTURE.

279. The position for operating, recommended by Dr. Sims, was "to place the patient on her elbows and knees on a suitable table the knees separated some six or eight inches, the thighs at about right-angles with the table, and the clothing all thoroughly loosened,

so that there shall be no compression of the abdominal parieties. An assistant on each side lays a hand in the fold, between the *glutei* muscles and the thigh, the ends of the fingers extending quite to the *labia majora*; then, by simultaneously pulling the nates upward and outward, the *os externum* opens, the pelvic and abdominal viscera, all gravitate toward the epigastric region, and stretching this canal out to its utmost limits, affording an easy view of the *os tincæ*, fistula, etc. To facilitate the exhibition of the parts, the assistant on the right side of the patient introduces the lever speculum, and then, by lifting the perineum, stretching the sphincter, and raising up the recto-vaginal septum, it is as easy to view the whole vaginal canal as it is to examine the fauces by turning a mouth widely open to a strong light."

The method proposed by Dr. Hayward may be advantageously used when the fistula is near the neck of the bladder, or in the urethra. The patient being placed under the influence of chloroform, the bladder is depressed by introducing a large sized bougie into the urethra, to the very fundus of the bladder, then, by carrying the other end up to the pelvis, the bladder is depressed, and the fistula is readily brought in sight. In this position, the edges may be readily pared, and the sutures introduced in the manner already directed.

280. Whatever position the patient is placed in, as soon as the parts are fairly exposed, the operator should carefully and nicely trim the edges of the fistula in the manner heretofore described, leaving no part of it unfreshened. A ligature of silk should then be carried, by means of a spear-pointed suture needle, curved, to correspond to the direction of the fistula, through the two lips of the opening. The amount of tissue inclosed by the suture, should be at least half an inch on each side of the freshened surfaces. Thus, in a transverse fistula, the straight needle should be introduced half an inch anterior to its edge, pushed deeply into the vaginal septum, carrying it upward into the cellular tissue, uniting the vagina and bladder, and bringing it out just before the mucus lining of the bladder; then introducing it into the corresponding portion of the upper lip of the fistula, it should traverse it in the same manner, and be brought out the same distance above

Having introduced the requisite number of ligatures in this manner, bringing their ends out at the vulva, each is made to act as a guide to the silver wire, which is to take its place. These wires, twelve or eighteen inches in length, being attached to the extremities of the silk threads, are drawn by them, until the wires occupy their place. One end of the wires are then passed through the perforation in one of the cross-bars, and clamped, by pressing a perforated shot down upon them. After this is placed in its proper position, the other cross-bar should be introduced in the same manner, tightening the wires until the edges are approximated, and then clamping them with a perforated shot; after the cross-bars are secured, the ends of the wire should be clipped off close to the shot.

281. As soon as the operation is concluded, the patient should be placed in bed, on her side, the hips elevated, and the thighs flexed upon the abdomen. A self-retaining catheter should be introduced, and allowed to remain, excepting when it becomes necessary to clear the mucus and earthy deposit from it.

282. Mr. Baker Brown strongly urges the importance of keeping the bowels constipated, by means of opium, to secure success in this operation. His reasons for adopting this, instead of the common practice, of keeping the bowels loose, are: it prevents that disturbance of the coalescing parts, which is so apt to follow a motion of the bowels; and that it proves actually beneficial, by allaying irritation, controlling inflammation, and thus, generally favoring the healing process. This plan has been adopted by several of the most successful operators, and so far, has been followed by no ill effects. The patient should be kept perfectly quiet for the first six or eight days, and if any examination is made within this time, it should be done with a very small bivalve-speculum, being very careful not to interfere with the suture. If no urine has passed through the fistula by this time, the nature of the adhesions may be ascertained, and if sufficient, the sutures should be removed; where there is any doubt, however, on this point, they may be left until the fifteenth or sixteenth day, providing they do not produce too great irritation, or ulceration has not commenced around the ligatures.

283. *Special Instruments for the Approximation of the Edges of the Fistula.*—Many contrivances have been used, to approximate the edges of a fistula, yet none up to this time, have proved as successful as the suture. The instruments invented, and used by M. Lallemand and M. Laquier, were intended to approximate and keep in apposition the edges of the fistula, by means of small hooks, which pass into the vesico-vaginal septum. The first author used a silver catheter, in which was concealed curved hooks connected to a screw, which projected from the external extremity of the instrument. By drawing upon this screw, the curved hooks were caused to project through the eyes of the instrument at will. This catheter was introduced through the urethra to the bladder, and the hooks made to perforate the posterior lip of the fistula, about half an inch from its edge; then by drawing upon the catheter, and pressing the urethra backward, by a silver plate passed upon the instrument, and guarded by charpie, the edges were approximated, the apparatus being retained in this position until the fistula was closed. The instrument of M. Laquier was introduced through the vagina, and consisted of a pair of hooked forceps. The principle involved in both instruments, was the same, and neither of them has been successful, from the fact, that the hooks either tear or ulcerate out before union is effected.

284. *Anaplasty.*—The cure of vesico-vaginal fistula by transplantation, was first attempted by M. Jobert, but the operative process was copied from that made use of by Velpeau, in treating bronchial fistula. The following description of Jobert's operation I have taken from Velpeau's Surgery. “The fistula is abraded by means of caustic or a cutting instrument; a flap of much greater length than width, and also of greater or less length or breadth, according as the fistula itself is of greater or less size, or more or less deeply situated, is then cut upon one of the sides of the vulva, so that its point shall be turned toward the sub-ischiatic groove, and that its root may be continuous with the vulvar opening of the vagina. Dissected and separated from its apex toward its base, this flap should be sufficiently long to be drawn without difficulty through the fistula, into the bladder or urethra. Having folded it upon its cutaneous face, we pierce the

fold with a double thread; this thread, which is to serve as its conductor, being attached to the head of Belloeque's sound previously introduced into the urethra through the vagina, easily draws the tegumentary plug toward the fistula, and prevents it afterward from falling back into the vagina. As the presence of the thread in the urethra might cause ulceration, it would be advantageous to pass it through a female catheter, which would serve as a support, at the same time that it would give egress to the urine. It is evident, also, that the flap may be taken almost indifferently from the tissue of one of the labia majora, or from the inner surface of the thigh or near the breech. The important point is, that it may have a certain degree of thickness, especially on the side of its pedicle; otherwise with the length we are obliged to give it, it would be next to impossible to prevent its mortification. Perhaps, it would be well also, after having doubled it, to keep it thus folded at its point by means of one stitch of suture, and to let it contract itself and become vascularized, before introducing it into the vagina. It would also be advantageous, I think, to draw it by its larger extremity, and to use some force to make it enter, in order that its largest portion being in the bladder, might in some measure be retained underneath, by the fistula itself, which would then perform the office of a constricting ring. What is also necessary is, that the flap should be placed in contact with the fistula, by its cellular, and not by its cutaneous surface, and that the edge of the fistula should be in a state of abrasion. In this manner no stitches of suture are necessary, and the parts may remain in their places of themselves. We should not think of dividing the pedicle of the flap, till at the end of some weeks, and after having positively ascertained that a solid agglutination has taken place between the new substance and the periphery of the fistulous opening. This section, also, should be made toward the middle of the length of the flap, in order that in retracting by its near extremity, it may ultimately form a sort of button with two heads; one in the vagina, the other in the bladder."

285. This method has proved successful, in the hands of M. Jobert, in several instances, and the fact that it is one of the

easiest operations to be performed, should recommend it to the attention of the profession. In order that it may be successful, the same care will have to be used in the after treatment, as recommended in operating with the suture. If the union is not complete around the entire circumference of the fistula, after a sufficient time, the edges may be touched with the Nitrate of Silver, to favor adhesion.

RECTO-VAGINAL FISTULA.

286. By this we understand the existence of an unnatural opening between the vagina and the rectum, which gives passage to involuntary discharges of flatus and faeces. These fistulas, which are generally longitudinal in direction, may arise from either of the following causes. *First.* From some cause connected with labor, as from the prolonged pressure of the child's head, giving rise to inflammation and sloughing, from the careless or awkward use of instruments, or from laceration during delivery. *Second.* From a recto-vaginal abscess or from a pelvic abscess, which opens in two directions, perforating the vagina and the bowel. *Third.* From stricture or other disease of the rectum. *Fourth.* From cancer or corroding ulcer, either of the rectum or vagina; or from syphilitic ulceration.

287. This disease, though not in general as distressing to the patient as the one last described, is a source of constant annoyance. If the opening be large, admitting the involuntary escape of fecal matters, the condition of the patient is most pitiable; the passage of the faeces over the edges of the fistula and through the vagina keep up a continuous irritation which sometimes runs into a severe erythematous inflammation. Even if the existence of the local injury does not effect the general health of the patient; the distress of mind occasioned by her unpleasant condition, is generally sufficient to do so; she is cut off from society, and in the solitude of her own sufferings, her spirits and health are apt to fail.

288. The seat and character of this fistula may be ascertained by an examination by the rectum and the vagina. Ascertain first the position of the vaginal opening, by means of the speculum, then by introducing the finger into the rectum and passing a probe

from the vagina through the fistula, until it can be felt in the rectum; the character of the opening can be determined. If, from any cause, the probe can not be passed through the fistula, injections passed through it will enable the operator to determine its course.

289. *Treatment.*—The tendency to spontaneous cure is considerable in recto-vaginal fistula, when it arises from accidental causes. As the neighboring parts contract, concentrically toward the opening, so does it diminish, narrow, and sometimes close entirely up. The development of granulations from the edges of the fistula, likewise contributes to fill up the space and especially to form the cicatrix. Thus fistulous openings, of which the size is so great as to do away with all hope of occlusion, are, notwithstanding, more or less closed up in the course of time.

The treatment in this variety of fistula will be the more successful the sooner it is resorted to after the opening has formed, and it is at this time that the attention of the physician should be especially drawn to them. As this primary treatment will depend much upon the cause, we will consider it in this relation.

If it arises from sloughing after prolonged pressure of the child's head, the natural tendency of the parts to close will not be so strong, as where it arises from the other causes named. The treatment in this case consists in a careful attention to cleanliness, quiet, and the use of stimulating applications to the edges of the opening; as a solution of Sulphate of Zinc or Sesqui-Carbonate of Potassa of sufficient strength. If the fistula is of long standing we will have to resort to the means recommended for vesico-vaginal fistula, cauterization, paring the edges, and use of the suture, or *anaplasty*. The application of these methods is so similar to that described for the other variety of fistula, that a repetition would be useless. If the fistula arises from laceration of the vagina, either as the result of an improper use of instruments or not, the patient should be kept quiet in bed, with the thighs flexed upon the abdomen and tied together, and the perineum supported by a well-adjusted perineal bandage. As the intention is to favor the union of the parts by first intention, the bowels should be kept constipated to prevent any strain upon the

parts, and the urine drawn off with the catheter as often as it may be necessary.

290. When the fistula arises from a recto-vaginal abscess, it will generally yield to the application of caustics. If this does not succeed, or if the fistula is of very long standing, we will have to resort to the means described under the head of vesico-vagina fistula. Those fistulas that arise from pelvic abscesses are sometimes very tortuous, and extremely hard to manage. No definite rules can be laid down for their treatment. For a case of this kind successfully treated by Dr. Barton, on a new plan, see American Journal of Medical Sciences, for June, 1840. If the fistula arises from stricture or other disease of the rectum, the removal of this will often be found sufficient to close the opening; at any rate this should be first accomplished, and if the fistula does not then close, it should be treated by some of the methods already mentioned. If it is caused by cancer of the rectum or vagina, palliative treatment can alone be adopted, allaying the irritation with opium or other narcotics, and cleansing the parts with frequent injections of warm water, etc.

291. As the principles of treatment are the same in thi disease as in vesico-vaginal fistula, the same attention will be required in the after treatment. If the suture is used, or the fistula closed up by anaplasty, it is highly important that constipation of the bowels should be kept up, as a much greater degree of success has attended this plan, than that of keeping them loose with fluid discharges. The success attending operations for this lesion is much greater than that for vesico-vaginal fistula, owing to the fact that the recto-vaginal septum has greater thickness, and is not so movable, and that all discharges may be prevented by the use of opium.

292. The following interesting case of recto-vaginal and double perineal fistula, the result of Syphilis, successfully treated by my colleague, Prof. Z. Freeman, presents many points of interest, and illustrates the difficulties to be met with in the treatment of these diseases, as well as the success that may be expected to follow the persevering application of the principles heretofore mentioned. This case was reported in the Eclectic Medical Journal for April

1855. "Miss E., aet. 18, of sanguine-bilious temperament contracted syphilis, two years since. There were two small chancres on the labia majora, one at the junction of the right nymphæ with the vagina, and one, larger and deeper, at the fourchette. The former was soon healed by the application of Arg. Nit., followed by the black wash; but the latter did not heal—the vaginal secretion keeping it constantly irritated. During its early period it was very troublesome, by its constant irritation; but, the chronic stage coming on, it pained her but little. The ulceration continued slowly, until it burrowed a deep cavity in the perineum, between the fourchette and rectum. The pus and vaginal sécrétion accumulating induced fistulæ of the perineum, one opening through the middle of the perineum, on the raphe, another opening at the junction of the right thigh with the perineum, and a third on the left side, opposite the second. The two latter also communicated with each other across the perineum.

"The ulceration, continuing upon the rectum, formed two fistulous openings into the gut, four lines from each other, and one inch and a half from the verge of the anus. The recto-vaginal fistulæ were circular, two lines in diameter, and passed through the anterior face of the bowel. The fluid contents of the intestine passed constantly through those fistulæ into the cavity behind the fourchette, and from this into the vagina, and also through the perineal fistulæ, keeping her clothes constantly soiled. Half an inch above the fistulæ the gut was strictured, so that at times it was difficult to pass the fæces except in small ribband-like portions. The disease had assumed the secondary form.

"She had had large superficial cutaneous ulcers on her legs, which left copper-colored and brassy marks, her back was covered about half its size with small superficial ulcers, scabs and copper-colored eruptions. There was a large fetid ulcer in her mouth, at the junction of the jaws, near the right lateral half-arch of the palate. Her breath was fetid, skin pale and sallow, and her vital powers much exhausted. The fistulæ were

morbidly irritable and discharging ichorous pus. The above is the condition in which I found her Sept. 5th, 1854.

“Treatment.—Alkaline bath with friction, three times per week. **B** Compound Syrup Stillingia Sylvatica, 3vij Iod. Potassa 5j. M. Take 5j three times a day. Avoid greasy diet and stimulants. Apply to the eruptions and ulcers on the back and legs, after the castile soap water, **B** Oxalic Acid 5j, Water 5j. M, once per day, follow thirty minutes after with the Mild Zinc Ointment. Applied Arg. Nit. with the Porte Caustique, to the sore in the mouth, every morning, until its fetor was corrected and was healing. Injected into the perineal fistulæ **B** Sesq.-Carb. Potassa 5ss, Water 3ij. M, until the irritability had subsided, and they were discharging more healthy pus. I then forced in the fistulæ cotton completely charged with Pulp. Zinc. Sulp., until the openings were much dilated, and their lining membrane disorganized. The parts became much inflamed and swollen during this course of treatment, but with the subsidence of inflammation commenced the healing and narrowing of the fistulæ. This treatment also corrected the condition of the ulcer internal to the fourchette in the perineum.

“Nov. 2d.—Administered chloroform, dilated the rectum with a ~~glass~~ speculum, with one imperfect side. By passing a curved probe up to the fistulæ, I could pass it through the rectum against the vagina, and by bending it more, with a finger in the vagina, I could pass it down and out of the genital fissure. The fistulous canal seemed to pass through the cellular tissue, between the vagina and rectum, from the vaginal ulcer to the openings through the rectum. I then inserted a probe-pointed bistoury up the speculum, introduced the point into the fistula, and cut the edges all around, trimming off the lining membrane until it bled freely, then with a firm curved needle, six lines in length, armed with a ligature of silk, I took, (with a pair of firm-bladed forceps,) two sutures in each opening, and with perforated shot on each side of the holes, I compressed the ligatures and approximated the sides closely, kept the patient quiet for seven days, and though the holes were much less in size, yet there was some oozing through them. My object in attempting to close the recto-vaginal fistulæ

before the perineal, was to prevent any matter from the bowel passing into the perineal fistula, and thus preventing them from closing.

“ Nov. 20th.—Administered chloroform, and finding that I could not work to advantage through the rectum, I dissected up nine lines of the vagina from the rectum, commencing at the cavity formed at the fourchette by the previous ulceration, and extending in the direction of the uterus. This exposed the fistulous openings completely. The parts were too tense to bear a clamp-suture without forming fistula to correspond with the needle-perforations in the gut; and so, after trimming the edges freely with a bistoury, I approximated them by taking sutures in the adjacent parts, and turning the bleeding surface of the adjoining tissues into the fistulous openings, and sewing them together by stitches taken through the whole mass.

“ I gave her orders to keep the thighs approximated for one week, and to have her urine drawn with a catheter every day.

“ Dec. 2d.—Cut out the sutures. The parts have approximated, no fluid having passed through; parts closed; perineal fistula healing. Patient is doing well.

“ Dec. 12th.—Still doing well; parts seem firm, no secretion passing through.

“ The walls of the rectum seemed so tense, that I found it extremely difficult to find loose material enough in them to allow of the approximation and retention in situ of the sides of the fistula, and so I turned the raw surface of the adjacent tissue into the openings, and completed my operation by anaplasty.”

LACERATION OF THE VAGINA.

293. Laceration of the vagina may be caused by forcible expulsive efforts during labor, or by the improper or careless use of instruments. The laceration may be complete, the whole of its coats giving way, and forming an opening either into the bladder in front, the rectum behind, or into the abdominal cavity above; or incomplete, the laceration affecting the mucous membrane, or it and the middle coat. Either of these forms may or may not be accompanied with laceration of the perineum.

294. Complete laceration of the vagina, either of its anterior or posterior walls, has been already referred to under the head of recto and vesico-vaginal fistula. Rupture of the upper portion of the vagina into the cavity of the abdomen is of extremely rare occurrence. This accident would be very dangerous, producing peritonitis, and should be treated on general principles. It is to the incomplete lacerations, and the importance of an early attention to them, that I wish to draw attention. In all cases where rigidity of the soft parts exists, especially in first labors, a careful examination should be made after the birth of the child, in order to detect this lesion, if it exists. According to Dr. Ramsbotham, the medical attendant may perhaps be sensible that a laceration has occurred, but it may take place when neither the medical man or the patient is at all aware of what has happened, the pain which the parts are suffering being but little increased by the fibers giving way. After the birth of the child, inflammation will supervene, and a cicatrix form in the place of the rupture. If the laceration is considerable, especially if there be two or more, the subsequent cicatrization may produce such a contraction of the vagina as to prevent sexual intercourse, or, if this is not the case, it will prove an impediment in succeeding labors.

295. The treatment of these cases consists in introducing oiled-lint into the vagina, in order to prevent contraction of its canal, and the application of poultices to the vagina to subdue inflammation, if it should be severe.

CHAPTER VI.

LACERATION, OR RUPTURE OF THE PERINEUM.

296. This accident, when severe, is one of the most distressing lesions consequent on labor, and though it is of comparatively unfrequent occurrence, yet it deserves the careful consideration of the student and practitioner. Slight lacerations of the perineum are of frequent occurrence in first labors; this does not, however, produce much inconvenience, as the parts generally heal without assistance. From this slight degree of laceration, we may have it varying in extent, to the entire destruction of the perineum, extending through the sphincter ani, and laying the cavities of the vagina and rectum into one.

297. Mr. Baker Brown notices four varieties of ruptured perineum. "1st. That in which the perineum is torn to the extent of an inch or less from the fourchette. This degree of injury is one of no great moment; it is little marked when the parts return to their quiescent or normal state, and requires no special treatment. 2d. Where the perineum is torn between the constrictor-vaginae and sphincter ani, those muscles remaining intact. This is actually a perforation of the perineum, and in some rare cases has given passage to the child. 3d. Where the laceration occupies the entire length of the perineum, but does not penetrate the sphincter ani. 4th. Where it extends so as to divide the sphincter ani, and even the recto-vaginal septum. It is this last form which constitutes so heavy a calamity to the patient, and has hitherto been found so little amenable to treatment."

298. The causes favoring or producing rupture of the perineum are, according to Dr. Churchill, "any deviation from the ordinary mechanism of parturition; from mal-conformation of the passage or soft parts; from mal-presentation, or from mismanagement."

The causes favoring or producing rupture are,

1st. If the sacrum be too perpendicular, the head of the child,

instead of receiving a direction anteriorly in the line of the axis of the lower outlet, will be forced downward upon the posterior portion of the perineum.

2d. If the arch of the pubis be too acute, so as to prevent the presenting portion filling its upper part, extraordinary dilatation of the orifice of the vagina will be necessary, and the head will be pressed with unusual force upon the anterior part of the perineum.

3d. A similar effect is said to be caused by a thickened state of the urethra and circumjacent parts, in the arch of the pubis.

4th. The too rapid passage of the head may be attended with this accident. This may depend upon the extraordinary violence of the pains, or the small size of the head, which prevents its receiving the successive changes of direction from the plane surfaces of the pelvis, and the changes in the axis of the cavity and lower outlet.

5th. Exostosis in any part of the pelvic cavity may so act upon the direction in which the foetal head is propelled, that rupture of the perineum may result.

6th. Excessive breadth of the perineum, by receiving the force of the descending head in its center, may be a cause of laceration, because the head rests in the center, and distends it, instead of gliding forward to the anterior edge.

7th. Rigidity of the perineum, or an old cicatrix, may resist the dilating power of the head, and ultimately give way under the employment of greater force.

8th. The tissue of the perineum may be weakened by disease, or by too much pressure, so as to offer little or no resistance.

9th. Mal-position of the child's head, by presenting a longer diameter than usual to the lower outlet, may give rise to this accident.

10th. Mal-presentations.—Face presentations, involving the passage of the head in its longest diameter over the perineum; breech or footling cases, which do not receive a proper direction so readily as the head, may also lacerate the perineum.

11th. The accident may arise, from the woman being placed awkwardly for delivery, or from her starting away from the

attendant, or from her exerting too much force at the time the head passes through the lower outlet.

12th. The perineum may be torn in consequence of want of care, when instruments are used. They ought generally to be removed just before the head passes through the vaginal orifice.

299. From a consideration of the causes above-named, it will seem, that no care on the part of the accoucheur can prevent this laceration in many cases. If the causes named in Articles 1, 2, and 3, exist, they may be remedied by the application of the hand in such a manner as to give a forward direction to the head. In order to prevent, as far as possible, the occurrence of laceration, from a too rapid passage of the head of the child, the patient should be told to moderate her expulsive efforts, when the head is distending the vulva, and not to bear down more and more, as is always recommended by the attendants present, and by most obstetricians. Rigidity of the perineum may be overcome by the use of fomentations of hops and lobelia, applied as hot as can be borne, and the internal administration of tincture of Lobelia Seed. The other causes of laceration, may be prevented in most cases, by having the patient placed in a proper position, and by affording a proper support to the perineum. As many conflicting opinions prevail, as to the propriety of supporting the perineum, the question arises, how shall it be supported so as to prevent laceration?

300. Dr. Tyler Smith says on this subject, "some years ago, I pointed out that pressure on the perineum excited reflex contractions of the uterus—a point which is, I believe, now pretty generally recognized, and I grounded upon this circumstance, and upon the facts that, in cases where pressure or support is most assiduously rendered, laceration sometimes occurs, while it rarely happens when women are delivered by themselves, an objection to the constant and sustained support to the perineum, during the latter part of labor. I believe that long-continued pressure tends to produce the accident, by increasing the expulsive pains and by damaging the perineum itself. We read of cases in which the perineum was supported for many hours in succession; which must always be unnecessary, since, if the pains are strong enough to threaten laceration, the expulsive stage could not last the time

described. My advice with regard to the perineum is, that the fore-finger of the left hand should be kept upon the anterior margin of the perineum during the last pains, and the right hand upon the head, with a view to ascertain the moment when the perineum is distended to a dangerous extent, with one hand, and at the same moment to retard the advance of the head with the other. The head should be pressed in passing, close to the pubis, so as to sustain the perineum as much as possible. If we prevent the rapid passage of the head, we do more to prevent laceration, than can be accomplished by the most careful pressure."

CONSEQUENCES OF RUPTURED PERINEUM.

301. These will depend upon the extent of the laceration; thus if it be slight, no ill consequences will ensue; but if it be of sufficient extent to weaken the perineum, especially if it extends through the sphincter ani, the results will be very serious, leaving the patient in a very pitiable condition. As I have already stated when describing the perineum, this forms the center of support to the entire pelvic viscera, giving attachment to all the muscles that form the floor, and close the outlet of the pelvis. It might be well compared to the keystone of an arch, the destruction of which would compromise the safety of the entire structure. The perineum forming, as it does, the center of support to the vagina, and through this to the uterus, antagonizing the action of the diaphragm and abdominal muscles, and preventing any downward displacement of these organs, can not be weakened to any great extent, without producing more or less displacement, and consequent uterine disease. Prolapse of the uterus, vagina, bladder and rectum, with all their attendant consequences, are not unfrequent results of this lesion. Again, when the sphincters are ruptured, their functions are lost, the faeces pass through the vagina involuntarily, and the utmost attention to cleanliness will not suffice to prevent the offensive odor, which renders the patient an object of disgust to herself and friends.

302. *Treatment.*—Two modes of treatment have been adopted for the relief of this difficulty. The first of these, the old method, consisted in tying the legs together, keeping the patient entirely

quiet, strict attention to cleanliness, and other general measures to favor the natural disposition of the parts to heal. This plan of treatment was very unsuccessful, so far as an entire closure of the ruptured perineum was concerned; still by this treatment there was generally some closure of the laceration, and such a contraction of the parts concerned, as greatly to alleviate the subsequent condition of the patient.

303. The second method of treatment consists in freshening the edges of the laceration, bringing them together and retaining them in apposition by sutures, and thus restore the entire perineum; or if there be too great a loss of substance to permit this, to transplant sufficient tissue from some other part, and thus restore this structure.

304. Ambrose Paré, the great innovator on the stereotyped processes of ancient surgery, and who may be called the father of modern surgery, first pointed out the applicability of sutures to this accident. The first application of this method, of which we have any account, was performed by Guillemeau, a student of Ambrose Paré; he used the interrupted suture, and was successful. During the present century the operation has often been resorted to, and with a variable degree of success.

305. This subject has been studied with great care by that distinguished German surgeon, Dieffenbach; he lays down the following rules of practice; "1st. That prior to the operation the bowels should be well cleared by purgatives and enemata. 2d. That despite the swollen state of the torn parts, the presence of discharges, and the debility of the patient after labor and delivery, the operation should be performed as soon as possible after the accident, since these evils would be more than counterbalanced by those consequent on delay; as suppuration, sloughing, and loss of substance, and the yet later results, displacement of the uterus and associated organs. 3d. That no rupture, however slight, should be left to nature, for the healing would be superficial, and the vulva enlarged proportionally to the extent of laceration, by the retraction of the labia toward the anus, the support of the pelvic viscera being also thereby diminished. 4th. That three to five sutures are necessary, according to the severity

of the accident ; the insertion of the suture commencing at the anus, and where the sphincter is torn, the first being applied at its angle. 5th. That, where the perineum is lax, either the twisted or interrupted suture may be used ; and when the vagina is implicated, its fissure should be first brought together ; also, that, where the perineum is tense and rigid, an elliptic incision should be made on either side of the median line, and equi-distant from it. 6th. That in those cases, where there has been a considerable loss of substance, the transplantation of an adjoining piece of integument may be resorted to. 7th. That, in cases of old standing, the edges of the fissure require to be pared before being brought in apposition by sutures. 8th. That, after the operation, the bowels should be bound by the use of opium, in doses of one-third of a grain twice a day, and that the urine should be regularly withdrawn by the catheter."

306. Of those surgeons who have performed this operation, none, probably, have met with greater success than Mr. Baker Brown of London. He has reported eighteen cases of this accident, in all of which, with one exception, perfect cures resulted. This fortunate result in his practice, compared with the less successful practice of others, would lead us to believe that the difference in the mode of treatment, which he proposes, has led to greater success. No other author that I have seen gives such a minute description of this operation. I have therefore given this method as the best with which we are acquainted at the present day.

307. "*Contra-Indications to Operating.*"—Before deciding on an operation, certain circumstances are to be taken into account. For instance, if pregnancy has advanced beyond the fourth month, if suppuration and inflammation exist, then the operation must be delayed ; in the former case till after parturition ; in the latter, until the arrest of these processes. The presence of leucorrhœa need not deter from operating, when it can not be removed by simple measures ; a postponement, however, is desirable, until after a menstruation. Cough, if present, should be relieved, on account of the straining it causes.

"It seems almost unnecessary to add that, if the patient's health be impaired, an endeavor should be made to improve it before

surgical means are resorted to; for the condition of the patient has much influence over the success of the operation.

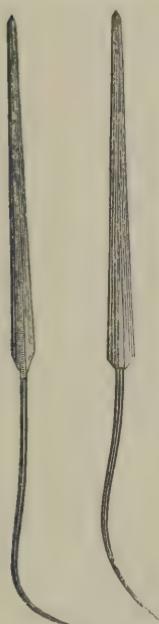
308. "*Time of Operating.*"—The operation may be performed immediately after the completion of labor. The surfaces of the wound are then fresh, and in a condition favorable to union by the first intention, and, consequently, the paring of the edges required in old cases is not here necessary. Should, however, surgical means not be resorted to on the day of delivery, the advantages accruing from the recent nature of the wound will be lost; the mischievous effects of the vaginal discharges will have placed the edges in a disadvantageous position for healing, and it will therefore not be desirable to attempt an operation until after the third month, by which time the parts will have recovered themselves, be capable of undergoing the necessary denudation, and be sufficiently strong to carry the sutures.

309. "As immediately preparatory measures, the bowels should be well cleared out by aperients; such as ox-gall or castor oil, and by injections of salt and water. Warm baths are not objectionable; but, generally, sponging with warm water is sufficient. The diet, for some days prior to the operation, should be unstimulating, plain, and nutricious. As a last point, the bladder should be emptied.

310. "*Instruments required,* are a common straight scalpel, a blunt, pointed, straight bistoury to divide the sphincter, a pair of long dissecting forceps, three large needles for deep sutures, small ones for the superficial, interrupted sutures, a tenaculum, pieces of gum-elastic catheter or bougie, with twine well waxed, sponges, etc.

FIG. 15.
CURVED NEEDLES,
For the Introduction of the
deep Sutures.

"The needles used for deep sutures are fixed in handles, and more or less curved, to adapt them to different cases; the width of perineum and the thickness of the tissues varying considerably in different persons.



311. "*Chloroform*.—The operator will require at least two assistants. Unless contra-indicated or opposed by the patient or her friends, it is desirable to place the patient under the influence of chloroform; for not only will she thereby be saved pain, but opposition and straining are avoided, and a favorable relaxation of the parts obtained.

312. "*Mode of Operating*.—The patient should be placed in the position for lithotomy: the knees well bent back upon the abdomen, and all hair closely shaven off about the parts. The sides of the fissure should be held by an assistant, so as to insure sufficient tension for the operator; a clean incision is now to be made, about an inch external to the edges of and equal to the fissure in length, and sufficiently deep to reflect inward the mucous membrane, and so to lay bare the surface as far as another

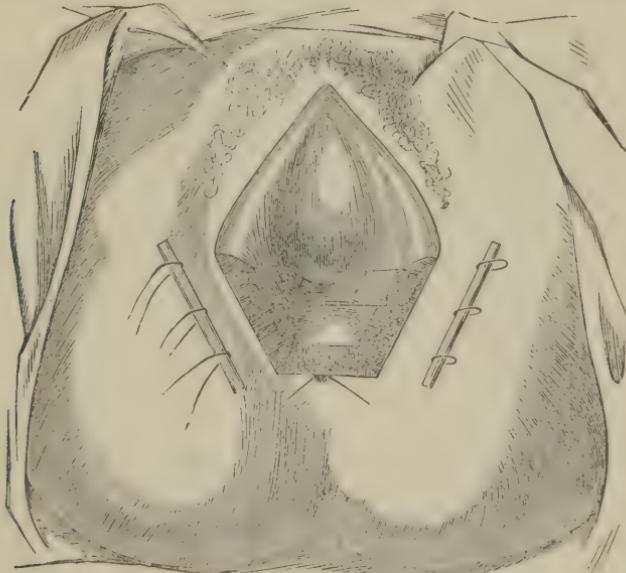


FIG. 16.—OPERATION FOR RUPTURED PERINEUM.

incision on the inner margin. The denudation of the opposite side of the fissure is then to be practised in a similar manner, and the mucous membrane from any intermediate portion of the recto-vaginal septum is to be also pared away.

313. "This denudation must be perfect, for the slightest remnant of mucous membrane will most certainly establish a fistulous opening when the rest of the surfaces have united.

"Some operators, especially continental, remove the mucous membrane by scissors, but this is a clumsy and unsafe method, and the knife will be found to effect the purpose quicker and better.

314. "*Division of the Sphincter.*"—So soon as this stage of the operation is completed, the sphincter ani is to be divided on both sides, about a quarter of an inch in front of its attachment to the os coccygis, by an incision carried outward and backward. The incision should be made by a blunt-pointed straight bistoury, which having been introduced within the margin of the anus, guided by the fore-finger of the left hand, is quickly and firmly carried through the fibers of the muscle and through the skin and subcutaneous areolar tissue to the extent of an inch, or even two, external to the anal orifice. The degree of relaxation to be sought must be regulated by the extent and character of the laceration; it being remembered that the freer the incision the greater will be the amount of relaxation obtained. In every case, muscular traction must be destroyed, for so long as it exists it will oppose the union of the parts.

315. "*Insertion of the Quill Sutures.*"—The sphincter having been divided in the manner just stated, the thighs are to be approximated and the quill sutures introduced. The left denuded surface and tissues external to it being firmly grasped between the fore-finger and thumb of the left hand, a strong needle carrying a double thread is plunged, with the right hand, through the skin and subjacent tissue an inch external to the pared surface, and thrust downward and inward beneath it until its points reappear on the edge of that surface; it is then introduced at the corresponding margin of the denuded space of the opposite side, and made to traverse beneath it in a direction upward and onward until it escapes at a point equi-distant from the external margin with that at which it entered on the left side. Each of the three sutures is to be introduced in the same way, the one nearest the rectum first.

The sutures are double, to allow them to enclose the quills, or

(as actually used) the pieces of elastic catheter or bougie, around which they loop on one side, and are tied over, by their free ends, on the other. For sutures I prefer stout twine, well waxed, to silk, as I believe it to be less irritating and productive of less suppuration.

316. *“Insertion of Interrupted Sutures.*—Having firmly secured the three sutures upon the bougies, the sides of the fissure become approximated — the denuded surfaces in apposition. To bring together the outer margins, along the line of the skin, it is advisable to pass three or four interrupted sutures. If this be carefully done, union of the skin will speedily take place, and that of the deeper parts, be materially facilitated. As an accessory or superficial suture, the twisted form is used on the continent; but I think the interrupted more simple, and have found it answer completely.

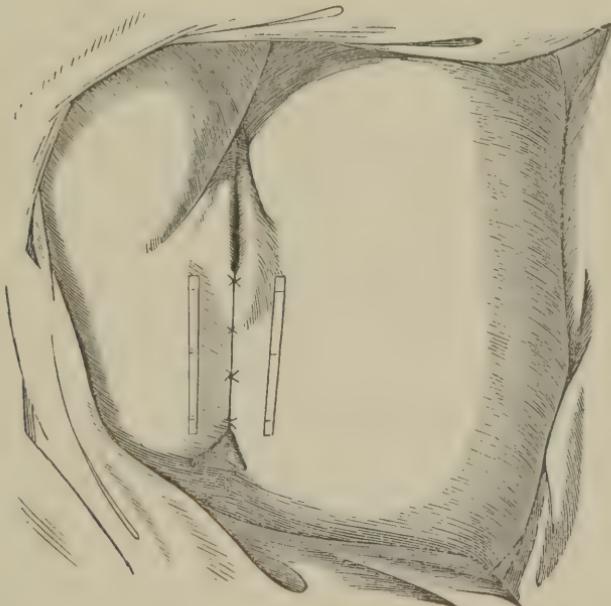


FIG. 17.—COMPLETION OF THE OPERATION.

317. “I should recommend, previously to bringing the operation to a close, that the fore-finger of the right hand should be

passed into the vagina, and that of the left in the rectum, so as to ascertain that apposition is complete throughout.

“ Lastly, the parts having been well cleansed by sponging with cold water, a piece of lint steeped in cold water is applied, and over it a napkin kept *in situ* by a T bandage.

319. “ *Operation in recent cases.*—The operation has been detailed with reference to cases of some standing, where cicatrization has occurred; with respect to recent cases of the accident, the only variation of the plan is in the omission of the otherwise necessary denudation of the margins of the fissure.

320. “ *After treatment.*—The patient having been removed to her bed, should be placed on her left side, on a water cushion, with the thighs and knees close together, and flexed on the abdomen. Perfect quiet enjoined, and cold-water dressing to be continued. Ice given to suck for twenty-four hours, is refreshing, and allays febrile reäction and nausea. Two grains of opium should be given at once, and one grain repeated every four or six hours. Beef tea and Arrowroot may be given within the first twenty-four hours, but not wine, unless there are signs of flagging; the wine I give, is port. After the first day, four ounces of wine may be allowed; and a generous diet—chops, strong beef tea, etc., after the second or third day. This is, supposing no symptoms occur to contra-indicate such regimen.

321. “ It is of great importance, to draw off the urine by the catheter, every four or six hours, for three or four days after the operation. As the patient lies in the obstetric position, this is best done by introducing the catheter between the thighs, from behind; and in withdrawing the instrument, the thumbs should be kept on its end, in order to prevent any urine remaining in it from escaping into the vagina, whereby it might cause such irritation about the wound, as to render our attempts to close it abortive.

322. “ After some days, as on the eighth or ninth day, if the healing go on satisfactorily, and the strength of the patient be equal to it, she may be allowed to pass water, resting on the hands and knees, so as to prevent, as far as possible, its contact with the lower or sutured surfaces of the vagina.

323. "The deep sutures should be removed on the third or fourth day in hospital patients; in private cases, on the fifth or sixth. I have found their retention, after the periods named, of no service, but rather mischievous, by their tendency to suppurate and slough, results of more rapid occurrence in hospitals than elsewhere; hence the earlier date proposed in hospital cases. On the sixth or seventh day, the external sutures may be taken away. In withdrawing the sutures, care must be taken not to separate the thighs, for it is necessary to keep up their apposition for some time. The time for the removal of sutures above stated, does not correspond with my practice in the first cases I published; increased experience has led to the alteration.

324. "If, after the operation there should be any considerable bleeding not controlled by the simple water-dressing, pieces of ice may be introduced, or ice water injected into the vagina; other measures, as ligatures and torsion, are scarcely ever required. For removing secretions and keeping the parts clean, injections of tepid water may be used two or three times daily, especially after the employment of the catheter. By such, and by frequent sponging, perfect cleanliness must be attained. Should there be an offensive discharge, chloride of soda may be added. The opium should be persevered with, so as to keep the bowels constipated for two or three weeks after the parts are united; when union has become firm and complete, the bowels may be relieved with injections of warm water, with castor oil, and by the latter, given by the mouth. Attention should be paid during the passage of the first evacuation, and support given to the restored perineum, if any hardened masses should cause stretching.

325. "The precise time for opening the bowels must be regulated by the strength of adhesion set up, and by the amount of reparation of lost tissue which has been attempted.

"For some few days after the first evacuation, an enema had better be continued.

326. "Should adhesion, unfortunately, from any accident, not be complete throughout, and a fistulous opening persist, the actual cautery is the quickest and surest method of closing it, or the application of a caustic or stimulating substance may be applied."

CHAPTER VII.

PELVIC CELLULITIS—INFLAMMATION OF THE CELLULAR TISSUE OF THE PELVIS.

327. Between the intestinal, genital, and urinary canals, and between the *facia pelvica* and the parts invested by it, and between the two folds of peritoneum forming the broad ligaments, there exists an abundant quantity of cellular tissue, which is liable to inflammation and all its terminations, the same as cellular tissue in any other part of the body. This inflammation is not of unfrequent occurrence as a consequence of parturition, and the extension of inflammatory action from the uterus and its appendages, and from other causes. Though it can not be said to be a very fatal affection, even when it terminates in suppuration, yet, in many instances, it is of long continuance, greatly affecting the general health, and it sometimes terminates in the formation of very distressing fistulas.

328. The seat of the inflammatory process varies in different cases; thus, it may be confined to the cellular tissue, lying between and connecting the vagina and rectum; to that situated on each side of the vagina, between it and the lateral walls of the pelvis; to that lying between the two layers of the broad ligaments; and in some rare cases it may arise in the cellular tissue connecting the vagina and *cervix uteri* to the bladder. When inflammation attacks the broad ligaments, it is a difficult matter to tell whether the inflammatory process is confined to the cellular tissue, or extends to the ovaries and fallopian tubes.

329. *Causes.*—Pelvic cellulitis is probably of more frequent occurrence as a result of labor, than from any other cause; either as a consequence of the severe and long-continued pressure of the child's head on the tissues of the pelvis, or as the result of puerperal inflammation. It may, however, follow ordinary

labor. It may occur a considerable time after labor, or it may attack these tissues independent of the puerperal state, in married women, or in the unmarried. In these last cases, it may result from the extension of an inflammation of the uterus, fallopian tubes, ovaries, and vagina ; or, as the result of some violence done the parts, as by a fall, a kick, a blow, etc.; or like inflammation of other parts, from exposure to cold, atmospherical vicissitudes, etc.

330. *Terminations.*—This inflammation, after giving rise to great swelling and induration, by the effusion of serum, coagulable lymph, etc., not unfrequently terminates, under judicious treatment, in resolution, the inflammatory product being entirely absorbed, and the parts left in their normal condition. Or it may assume a sub-acute or chronic form, the inflammatory product becoming organized, and the mass of cellular tissue hypertrophied ; in this case it may give rise to morbid adhesions between the uterus and the walls of the pelvis, or between the ovaries and fallopian tubes, and the other pelvic viscera, or the walls of the pelvis, producing unnatural immobility of these organs, and the serious train of consequences that arise from this condition ; or it may terminate in suppuration, and the formation of a pelvic abscess. This abscess may point and discharge itself into the vagina, which is its most frequent course ; into the rectum ; it may pass down by the side of the rectum and open externally ; it may open and discharge itself into the bladder, the pus passing off through the urethra ; through the uterine walls into the cavity of the uterus ; into the peritoneum ; or if it is situated in the broad ligaments, it may discharge itself externally, through the abdominal parieties covering the tumor ; the discharge of the abscess into the bladder or uterus is very uncommon, but few cases being reported. Its discharge into the peritoneum is very rare, and as this would give rise to severe peritonitis, its occurrence would be always dangerous. The matter may be evacuated by any of these routes, and if the opening be sufficiently large, the sac will be emptied, and the abscess fill up and heal. But, if the opening be small, the discharge may continue for an indefinite length of time, or it may

form for itself another opening into a different organ or part. These openings, whether one or more, may remain fistulous, and be very hard to heal.

331. *Duration.*—The duration of this disease varies greatly, according to the habits, constitution of the patient, and to the producing cause. Thus, resolution may be effected in some, in from four to ten days, while in others it may continue in a chronic form, from one to three months. The same difference exists when the inflammation has terminated in suppuration. The average duration of the cases reported by Dr. Lever, was eight weeks, shortest duration three weeks, and the longest thirteen weeks.

332. *Symptoms.*—The symptoms of this affection are at first very obscure, and may be ascribed to inflammation of any of the pelvic viscera. The commencement of the inflammation is generally marked by considerable constitutional disturbance; the patient complains of weariness and aching in the limbs, headache, loss of appetite, etc.; the pulse is accelerated, considerable thirst, a dry, constricted state of the skin, and a good deal of irritability and restlessness. The patient feels a constant weight and dragging down in the pelvis, with pain more or less acute at the seat of the inflammation, and which radiates from this point in all directions. This weight, tension, bearing down, and pain, is greatly increased when the patient assumes an upright position, and most generally by the act of defecation; in many cases, it is extremely difficult, if not impossible, for the patient to straighten the thighs, or stand quite upright. The effects of this inflammation on the bladder and rectum, from an extension of the irritation to them, or from the pressure arising from the formation of an abscess, sometimes gives rise to very distressing symptoms; as a constant desire to pass water, or a difficulty in passing it, attended with pain and a sensation of heat; and frequent and distressing calls to evacuate the bowels, which is sometimes attended with great difficulty. These symptoms may continue for a longer or shorter time. If the disease terminates in resolution, they will gradually diminish and ultimately cease; the tumor becoming smaller and less tender, until it entirely disappears. If the inflammation terminates in suppuration, there is a lull in the

general symptoms, the pain becomes throbbing, and there are generally chills of greater or less severity. The fever assumes an intermittent form, the exacerbations almost always occurring in the evening.

333. *Diagnosis.*—It will be seen that the general symptoms given above are not sufficient to form a diagnosis, as they are similar to those produced by other diseases of this region; we have, therefore, to depend on the results of an examination, made as heretofore directed, to distinguish the seat and character of the disease. By means of an examination by the vagina, rectum and hypogastrium, we can determine exactly the seat of the enlargement; whether in the broad ligaments, in the cellular tissue, at the sides of the pelvis, or anterior or posterior to the vagina; and also the absence of disease of the uterus, rectum, bladder, and vagina. Pressure on the enlarged part is attended with great pain, and there is a marked increase in the natural heat of the region. When an abscess has formed, if it is low down in the pelvis, distinct fluctuation can be discovered through the vagina or rectum.

334. *Treatment.*—If we are called in the early stage of the disease, our object should be to arrest the progress of the inflammation, and procure resolution. For this purpose we might use the spirit vapor-bath with much advantage, if the general health of the patient would permit it; whether this be used or not, hot fomentations of hops, of lobelia, or stramonium, should be applied over the lower portion of the abdomen, and over the vulva. This will afford great relief to the patient. The frequent use of warm vaginal injections, with counter-irritation, or dry cupping over the lumbar and sacral regions of the spine, will also be of great use. With this I would administer the sedative, Aconite or Veratrum, with any other remedy especially indicated, as the Macrotys, Bryonia, Rhus, Phytolacca, etc. In some cases lime water exerts an excellent influence, especially if the patient has shown a tendency to inflammation of cellular tissue. If, as in many cases, the tongue is broad, pallid and dirty, I would advise Sulphite of Soda in doses of ten grains every two hours. The Hamamelis proves a good remedy when the tissues are full, and there is a sense of dragging

in the pelvis. The Viburnum is indicated when there is tension and expulsive pain. If the disease progresses slowly, with an abundant deposit, and an inclination to rapid breaking down of tissue, use the Uvedalia ointment thoroughly. Cathartics are inadmissible in the most of cases, their action producing great pain, and a determination of blood to the already congested tissues; in the place of these, it would be well to move the bowels once a day, by the use of free injections of warm water. If the patient was already debilitated before being attacked by this disease, the general health should be improved by the administration of the vegetable tonics and iron.

335. If, however, in spite of the persevering use of the means above-mentioned, for three or four days, the disease still continues, we may expect that suppuration has, or will take place, and our object will then be to promote it by the use of fomentations and poultices constantly applied. When suppuration has taken place, which is indicated by rigors, a dull throbbing pain, and by the fluctuation felt on an examination; the question arises, shall we leave the discharge of the abscess to nature, or open it in the most convenient and least dangerous situation? My opinion is, that where it can be opened through the vagina or rectum, it would be better to do so, rather than to run the risk of the matter burrowing in the tissues of the pelvis, or opening into the peritoneum, bladder or uterus. On this point Dr. Churchill says, "I can not too strongly impress upon my readers the advantage of making an opening into the abscess, when possible, and so deciding the course which the matter ought to take, instead of leaving it to burrow and open in some inconvenient or dangerous situation. If we perceive the thinning and softening pointing in the vagina, our minds may be easy, providing it opens freely into it, and, in some cases, the fact of a small opening having taken place, may be determined by examining the discharges with a microscope. If the opening be not large enough, we can easily make it larger. An opening through the vagina, rectum, or external parieties is safe enough and far better than the chance of an opening in the peritoneum. Our great duty is to see that the opening, whether spontaneous or made with the lancet, is sufficient

to empty the sac, and that the matter is completely evacuated. Should an opening form in an inconvenient or dangerous situation, we must meet the consequences according to the means at our disposal. It will be better even to make a second opening, and freely empty the sac, rather than allow a fistulous communication to continue."

336. Before we attempt to open the abscess, we should satisfy ourselves positively in regard to the contents of the tumor. For this purpose, the exploring needle should be used, and the fluid drawn by it examined.

337. When suppuration commences, the diet must be generous, and the patient's strength supported by a free use of stimulants, and the bitter tonics.

338. The fistulous passages remaining after the discharge of these abscesses, may continue for an indefinite length of time. The treatment of these will have to be suited to each particular case, though in many of them the treatment recommended under the heads of vesico and recto-vaginal fistula, will be applicable.

339. To illustrate the rarer forms of fistula occasioned by this disease, as well as to show its general course, I give below the report of three cases, by Dr. Simpson. In the first of these cases, the abscess discharged itself both through the bladder and uterus, forming *vesico-uterine fistula*; in the second case, the discharge was into the uterus and intestine, forming *utero-intestinal fistula*; in the third case, the abscess opened into both the rectum and bladder, the vagina remaining intact, forming a *recto-vesical fistula*. These cases will be found very interesting, as they illustrate the course of the disease, and the singular manner in which it sometimes terminates.

340. Case 1st. The patient, aged 22, the mother of two children, was admitted into the female ward of the Royal Infirmary, in June last. Her youngest child was then eleven months old, and she had made a perfect recovery after her confinement with it. About six months, however, subsequently to her delivery, she was seized with local pelvic pains, dysuria, and the usual symptoms of pelvic cellular inflammation. Three or four weeks after the commencement of this attack, she had shiverings and

perspirations, and other symptoms of hectic fever. These symptoms were shortly followed by evidence of the escape of purulent matter, and subsequently, complete incontinence of urine came on. After this, the urine continued to be discharged per vaginum, up to the date of her admission into the hospital, four months after the commencement of the inflammatory symptoms. The urine contained a considerable quantity of pus. On examination, the urethra was found perfectly patent, although the urinary secretion was not discharged through it. There was still a considerable mass of fixed inflammatory deposit in front of the cervix uteri, or in the cellular tissue, between it and the posterior wall of the bladder. The cervix uteri itself was considerably hypertrophied, particularly its anterior lip. That the urine passed through the os and cervix uteri from the bladder, was ascertained by the simple experiment of filling up the os uteri for a day, with a small sponge tent. During the time the cavity of the os uteri was stopped up with this plug, the urinary discharge was evacuated through the urethra; but immediately began again, and continued to pass through the artificial vesico-uterine opening as soon as the sponge plug was withdrawn. After withdrawing the plug, the cervical cavity, which had been dilated by its presence, was examined by the finger, and two apertures were found passing into it, or rather leading from it: one, the normal aperture, leading upward into the cavity of the uterus, as ascertained by the uterine sound; the other, tending obliquely forward toward the cavity of the bladder. This latter artificial opening was freely cauterized by solid nitrate of silver. Subsequently, local and general measures was employed, as external counter-irritation, iodine, etc., to promote the absorption of the inflammatory deposit. In the course of a few weeks, the swelling from between the bladder and the cervix uteri diminished, the incontinence of urine became gradually lessened, and was ultimately totally arrested; the cure being, as I believe, the result of the natural contraction of the parts, following upon the absorption of the original inflammatory deposit. Subsequently, this poor patient was attacked with symptoms of pulmonary phthisis, and died a

short time ago, at a distance in the country, but without any return whatever of the incontinence of urine.

341. "*Case 2d.*"—A lady, a few days after her first confinement, was attacked with symptoms of fever, and local pelvic inflammation. These terminated in a very tedious pelvic abscess. About a year subsequent to her accouchement she was brought to Edinburgh, and placed for some time under my care. She still had considerable thickening and pain on pressure in the left side of the pelvis, which had been the seat of the pelvic cellulitis. The cervix uteri, and indeed the whole uterus, was elevated upward, and drawn considerably to the same side. On examining simultaneously with the fingers of the right hand on the roof of the vagina, and with those of the left hand placed externally over the left iliac region, much thickening and agglutination of the uterus and intestines could be readily ascertained in the left pelvic and iliac regions. Discharges of slight accumulations of pus recurred from time to time through the os uteri; and, occasionally, after these discharges, small quantities of feculent matter were found in the vagina—showing a communication to exist between the intestinal canal, at some part, perhaps the sigmoid flexure, and the cavity of the uterus. When the canal of the cervix uteri was gently examined by a slender probe or sound, a fistulous communication could be traced, passing up from the cavity of the cervix laterally toward the left iliac region; but this sinus could not be followed for any great length.

In this case there was a constant tendency to the recurrence of inflammatory attacks in the original seat of the pelvic inflammation, some of which were extremely severe. The patient subsequently removed to the south of England, where she died under, I believe, one of these renewed inflammatory attacks.

342. "*Case 3d.*"—The patient, when about twenty-three years of age, and unmarried, was attacked with fever and severe local inflammatory pain in the pelvis and left groin. After these symptoms had continued for some weeks, she was at length relieved by the discharge of a large quantity of purulent matter from the rectum. About twelve months after the occurrence of this pelvic abscess she was considered so well as to be allowed to

be married. But from that time she suffered from repeated attacks of pelvic irritation and inflammation, with leucorrhœa, irregular menstruation, etc. She never became pregnant. Several years subsequent to marriage, during one of these recurrent pelvic attacks, the bladder became greatly irritated; and after this painful dysuria had lasted some time, purulent matter was discharged along with the urine. Subsequently to this period, and on to the time of her death, four years afterward, small portions of feculent matter and flatus passed from time to time by the urethra, along with the urine, showing a communication to exist between the intestinal and urinary canals. As high up the rectum as could be reached by the finger, a fistulous opening was traceable in the anterior and lateral part of the bowel, and a probe could be passed forward to some extent through it. There was much thickening and agglutination of the pelvic tissues at that part. No treatment was of any avail in relieving the patient from her distressing symptoms. She died ultimately of a short illness from, as reported by Dr. Miller, some affection of the brain."

CHAPTER VIII.

VENERAL DISEASES.

343. The diseases that come under this head are eminently contagious, producing the same affections in the male. They are propagated only by actual contact, i. e., by sexual intercourse, the accidental contact of the virus, or by inoculation. Of this class of diseases we distinguish two varieties, neither of which is capable of reproducing, or changing to the other. These two diseases are, *Gonorrhea* and *Syphilis*.

GONORRHEA.

344. Gonorrhea in the female is, for the most part, a disease of very different character from that affecting the male. This difference, however, consists in the different location of the disease, and not in the character of the morbid virus which produces it.

There can be no doubt, but that this disease arises from a specific morbid material or virus, generated by the diseased parts, though the existence of this specific virus has never been fully demonstrated. This disease recognizes for its pathology, acute or chronic inflammation of the vulva, urethra, vagina, canal of the cervix, and even of the mucous membrane lining the cavity of the uterus, and of the fallopian tubes. This inflammation, though differing but slightly from the ordinary form, gives rise to the peculiar product by which it was produced, and which will continue to reproduce the same specific inflammation. On this subject Dr. Bennet remarks, "It is a singular pathological fact, that, although the existence of a specific and contagious form of vaginitis is generally admitted, yet it is difficult, if not impossible, to point out any decided characteristic, by which it may be distinguished from ordinary vaginitis. Like all those who have

preceded me, I am unable to indicate satisfactorily, any absolute means of distinguishing simple inflammation of the vagina and gonorrhœal inflammation, though I believe the difference does exist." Certainly there is a gonorrhœal virus, although it can not be demonstrated. In the female, gonorrhœa is not confined to the urethra, being scarcely, if ever, confined to that canal, and in some cases not affecting it at all; but it is also seated in the mucous membrane, reflected over the neck and mouth of the uterus, and in the canal of the cervix, in the vulva, the vagina and its follicles, and the vulvo-vaginal glands.

We have then to consider.

345. 1st. Urethral gonorrhœa, the type of the disease as it affects both male and female, differing, however, in the two so far as regards the anatomical structure of the two canals. The female urethra being much shorter, more dilatable, and lacking the prostate gland and other appendages of the male urethra, the affection of which so often greatly aggravates the disease; the consequence of this difference of structure is, that this form of the disease is much milder in the female than in the male. The contagious property of the virus, secreted by the urethra, is said by some authors to be much greater than that secreted by other parts.

346. 2d. A specific inflammation of the vulva or vagina producing a discharge, which will produce the *specific gonorrhœal inflammation* in the male; this may exist alone, or it may be complicated with the urethral or uterine inflammation.

347. 3d. A specific inflammation of the cervix uteri, of its canal, and of the mucous membrane lining the uterine cavity and the fallopian tubes, the product of which is contagious, reproducing the same specific inflammation in the male.

Either of these three forms of disease may be acute or chronic, or complicated with some other affection of the parts.

348. The urethral form of gonorrhœa is rarely met with alone; it is said that it scarcely ever occurs, unless complicated with the other forms. The symptoms that present themselves, are somewhat similar to, though much milder than those in the male. The first stage, that of irritation, comes on in from three to five days

after coition. The patient begins to experience a sensation of heat, itching, and general irritation along the course of the urethra, but more especially at the meatus urinarius. As the inflammation advances, the orifice of the urethra will be found swollen and gaping, and in some cases the mucous membrane will be slightly everted. The urethra along its entire course in the anterior wall of the vagina, will be found perceptibly enlarged, and more or less tender on touch. If the finger be pressed along the course of the urethra, a muco-purulent fluid will exude from the meatus; as the inflammation becomes more severe, the discharge will be more abundant, thick, and of a greenish-yellow color. There is pain in micturition, and a sensation of scalding when the urine is passed. Sometimes this irritation is so great, that the passage of the urine will be checked or entirely stopped by the spasmodic contraction of the urethra. There is also a constant desire to urinate, but when the urine is passed, it flows in a smaller stream and in smaller quantities. These symptoms usually continue from ten to fourteen days, when the third stage, or that of chronic or sub-acute inflammation sets in; during this period the acute inflammatory symptoms subside, the thick yellowish-green discharge ceases, and is replaced by one of a thin muco-purulent character. With the cessation of the severe inflammatory symptoms, the swelling of the urethra is reduced, and the tenderness and pain is much modified. The third stage of the disease may continue indefinitely for months and even years, the slight discharge and tenderness along the course of the urethra being all the symptoms that are left to mark the existence of the disease: even this gleety discharge is said to produce this disease in very susceptible persons.

349. According to Mr. Parker, when the vulva is the seat of the disease, the labia majora is more or less swollen; on everting them, their internal or mucous surface is red or inflamed, uniformly or in patches; or, again, it has an aphous, patchy appearance, especially in old cases; the surface is sometimes studded with warts, and occasionally the whole labia are converted into a condylomatous mass, which runs backward along the perineum to the margin of the anus, which is surrounded by similar growths

Sometimes a similiar condition of the mons veneris exists, but this is comparatively rare. The labia minora are also red and swollen, and the entrance to the vagina contracted, red, and intensely tender in acute cases; between the folds of the labia, a white, sticky secretion is found, like that under the prepuce in balanitis in the male. The irritation, itching, and pain are intolerable in gonorrhea, where the vulva is especially affected, particularly in cases where a newly married woman, previously healthy, has been diseased by the husband, who has married with an uncured **blennorrhea**, a circumstance not very uncommon."

350. When the vagina is affected by gonorrhea, it will be found contracted, its mucous lining hot, red, and painful, and the rugæ red and elevated; the inflammation rarely affects the whole vaginal surface at once; that part under the pubis being most frequently the seat of the disease. In from twelve to forty-eight hours after connection, the patient will perceive the first symptoms of the disease: a sense of heat, soreness, and fulness of the vagina, and there will often be a thin, colorless, and acrid discharge. In the second stage, when the inflammation is at its hight, these symptoms are all increased; the pain is severe, especially if any exercise is taken; there is a feeling of weight and dragging down in the pelvis and lower portion of the abdomen; the pain may extend to the back or down the thighs, and very frequently the irritation extends to the bladder. The discharges now become increased in quantity, and thicker, and of a whitish, greenish, or yellowish-green color. In from eight to ten days, the acute symptoms disappear, and the third stage, or that of chronic inflammation sets in. In this stage of the disease, the vaginal discharge is generally plentiful, though there is very little, if any, tenderness; the mucous membrane has lost its red appearance, and is generally paler than natural; the vaginal walls have generally a loose and flabby feel. This condition may continue indefinitely.

351. The mucous membrane covering the cervix, may be affected with the vagina, or it may be the seat of a separate affection; the symptoms are similar to those first described. The os uteri is frequently affected, as well as the cavity of the cervix.

In this case, the os will be found on examination, to be dilated, red and generally tender to the touch. The patient will complain of a weight in the pelvis, pain in the back and in the ovarian regions. The symptoms here never present the acute form that I have described above. The inflammation of the cavity of the cervix gives rise to a more or less profuse discharge of the peculiar transparent, tenacious, white of egg mucus, secreted by the follicles of this canal. This secretion may continue for months, retaining its contagious character to the last; it likewise exerts a greater effect on the general health, than any other form of the disease. Those cases in which the gonorrhreal inflammation extends to the cavity of the uterus, or the fallopian tubes, is fortunately very rare; some cases have been reported, however, in which this was the case, and in which the discharges were contagious. A few cases have also been reported, in which the disease produced severe attacks of peritonitis.

352. In general, but slight constitutional symptoms are developed, and these are so temporary that they give the patient but little uneasiness. In other cases, however, if the inflammation be very severe, the patient will suffer from rigors, heaviness and languor, pain in the back and round the loins, headache and thirst, with a quick pulse and a loaded tongue. These symptoms are mitigated, or disappear on the establishment of the discharge.

353. The question arises here—is gonorrhœa a purely local affection? From the experience that I have had in it, I think it is not, and in this opinion I am supported by some of the best authorities. On this subject, M. Erichsen says: "Although the gonorrhœa in the early stages is doubtless a strictly local affection, yet, there is a particular train of phenomena occasionally following it, of a very characteristic nature, that can scarcely be looked upon in any other light, than as being the results of constitutional infection, the more so, as they are very apt to occur in some individuals, who never have gonorrhœa without the disease being followed by these consequences, while others are altogether exempt from them. The parts that are principally affected, are the fibrous tissues, the mucous and the cutaneous surfaces. The affections of the fibrous tissues give rise to rheumatism, and to peculiar

forms of disease of the testicle and of the sclerotic. The affection of the mucous membrane displays itself in specific inflammations of the throat and of the eyes, and the skin becomes the seat of certain eruptions. The occurrence of these various affections, assuming as they do, a specific type so distinctly marked, that they can at once be characterized as gonorrhreal, certainly tends to show that the disease impresses the constitution in some peculiar manner, something analogous to, though in a far minor degree, and with much less certainty than syphilis."

354. Affections of the fibrous tissues, following gonorrhœa, in the female are rare; the affections of the skin and mucous membrane are, so far as my experience extends, far more common in the female than in the male. These attacks generally occur, in from six weeks to three months, after the first attack. The cutaneous eruption that I have noticed, consisted of a superficial inflammation of the skin, which appeared in patches, and gave the patient much uneasiness, on account of the itching which accompanied it; these patches appear principally over the abdomen and chest; as soon as their color begins to fade, the epithelium is partially thrown off in fine scales: it presents no sign of the coppery redness accompanying syphilitic skin diseases. The throat commonly becomes similarly involved at the same time, presenting a superficial redness on the pillars of the fauces, and the velum-palatti, with sometimes superficial ulceration on these, the tonsils and the uvula. The occurrence of these affections is usually preceded by slight febrile action, which, however, subsides on their full evolution. These secondary affections never occur only in those cases in which the primary local disease has not been properly treated.

355. *Diagnosis.*—Can gonorrhœa be diagnosed from other inflammatory diseases of these parts? According to Dr. Churchill, the distinction between vaginitis and gonorrhœa is very difficult. The discharge from the urethra, (though it does occasionally occur,) is much less frequent in leucorrhœa than in gonorrhœa. Out of every two hundred cases of the latter kind, Ricord states that eight in every twelve had the urethra so affected. The glands of the groin are also much less frequently enlarged in

simple acute vaginitis. In addition, the moral character of the patients will afford a certain amount of assistance in forming a decision.

356. The observations of Donne, if they are borne out by future investigations, will furnish the most reliable means of diagnosis. He states, that in the gonorrhœal discharge there are certain animaleculæ, which may be detected by the microscop', and which are never found in any other discharges from the vagina. These animaleculæ may be recognized by the elongated filiform appendix attached to their bodies, and which may be seen in motion if the discharge is recent.

357. As the diagnosis of this affection is so difficult, the physician should be careful not to express an opinion in these cases. Even if he is satisfied in regard to the cause, it is seldom that any good will result by insisting, even with the patients themselves, in tracing it to a criminal origin; while on the other hand the knowledge that the discharge in simple leucorrhœa, sometimes becomes so virulent in character, as to produce all the symptoms of gonorrhœa in the male, should make him extremely careful, lest he wrongfully accuse an innocent person.

358. *Treatment.*—In the ordinary cases of gonorrhœa in women, the treatment is quite easy if they are so situated that they can follow directions. Rest and cleanliness are two essential elements. Rest means the recumbent position and quiet until the active inflammation has passed off, if this is possible. To relieve the inflammation and for cleanliness, we order a warm sitz-bath, (sometimes a cold sitz-bath is more grateful), the diseased parts being thoroughly washed with glycerine soap whilst taking the bath. This bath may be repeated two, three, or four times a day, at first, and when there is no further occasion for the bath, a large bowl of water is so placed that the patient sitting over it can wash thoroughly. Sometimes a weak salt-water is less irritant than simple water; sometimes it is a weak solution of Chlorate of Potash, Borax, or Acetate of Lead. If the upper vagina is involved, an injection pipe will be required.

If there is tenesmus, we order an Opium suppository. Moving the bowels every second day with a saline laxative—Prof. Howe's Crab Orchard Salts and Sulphur does very well, with a small portion of Cubebs after the first week.

Put the patient upon the use of: R Tincture Veratrum, gtt. xx; Tincture Gelseminum, 3ss. to 3ij; Water, 3iv.; a teaspoonful every hour. With this give a simple diuretic as Althaea, Hair Cap Moss, an infusion of Melon Seed, until the urine becomes moderately free, and then Acetate of Potash, with an abundance of diluents to maintain the action. Usually twenty-four or forty-eight hours of this treatment gives marked relief, and we now add Cannabis Indica, Macrotys, Pulsatilla or Staphysagria, as may be indicated.

When the disease is confined to the urethra, I would risk the abortive treatment. Nicely round the pine stick to the size of a catheter, the end being made very smooth, dip it in the Nitric Acid, wipe dry, and after a minute, introduce it as you would a catheter. Of course it burns, though the burning does not persist as one would suppose, and is soon succeeded by a feeling of relief. The same means may be used at any part where the disease is localized and can be reached in this way. I am sure it offers the only certain cure for gonorrhœa of the cervical canal.

Following these sharp applications, the patient is kept quiet, put upon the use of sedatives, and has a hot sitz-bath, or an Opium suppository if necessary.

When the discharge has become profuse, I have obtained more benefit from Macrotys, Cannabis, Staphysagria and Pulsatilla, than other remedies. Sometimes the old prescription of Copaiba is very good, but very offensive. Cubeb is much pleasanter, and may be used in powder when we want a stimulant action.

359. For a wash when the discharge is abundant we may prescribe Chlorate of Potash, Sulphate of Zinc, Permanganate of Potash, Carbolic Acid, or what I prefer to all, a solution of Sulphate of Hydrastis, grs. iv. to Water 3j. It should be used after the parts are well cleansed, and held in contact with them for some time. In some cases more benefit seems to come from keeping the mucous surfaces apart rather than from the medicine. A piece of soft cotton cloth or lint, of proper width, folded upon itself, and wetted with Mucilage of Elm, medicated with Acetate of Lead and Morphia, carried up with the finger, a spatula or something of this kind, will be found to give very great relief. I have also employed the remedies named in this way. Or in place of this, we may use our remedies in the form of suppository, introducing them into the vagina.

In chronic cases where the mucous membrane is thickened and spongy, I use a local application of Nitric Acid, a strong solution of Permanganate of Potash, Sulphate of Zinc or Carbolic Acid, as may seem best adapted, but in either case so as to change the condition of the part and the secretion.

360. Where the gonorrhreal inflammation is located at the vulva, warm fomentations should be employed, until the irritation is subdued. The parts should likewise be well washed, at least twice a day, with warm water and Castile soap, to remove the tenacious secretions from the parts. If there be much pruritis present, the lotion of Borax and Morphia will be found to give much relief. In some cases a poultice, of equal parts of *Ulmus Fulva* and *Hydrastis Canadensis*, will be found to answer a better purpose than the fomentations. In old cases, where condylomata have been developed, they may be removed in the manner heretofore spoken of. (See Warty Tumors of the Vulva.)

361. The treatment of gonorrhreal vaginitis will be precisely similar to that recommended for acute and chronic vaginitis. In the chronic form of this disease, however, there are sometimes small vegetations springing from the vaginal walls, which will have to be removed before any treatment will be successful. This may generally be accomplished by clipping them off with a pair of scissors, and touching their base with the stick Nitrate of Silver.

362. The inflammation of the canal of the cervix that so frequently exists, and that is so rarely reached by the remedies used for this disease, is probably one great cause of the intractable nature of gonorrhea in the female. On this subject Mr. Langston Parker says, "I believe that gonorrhreal diseases in the female are very rarely completely cured. This, in most cases, arises either from neglect on the part of the patient, or the want of a proper knowledge of the disease, careful examination of the parts affected, and an appropriate topical medication on the part of the surgeon. If Mr. Whitehead's notion be correct, that the canal of the cervix is the first part affected, and the vaginal or urethral mucous surfaces are only secondarily diseased, the disease is not likely to be cured without topical applications to the primary seat

of the complaint. In all cases, then, of suspected gonorrhœa, the cervix uteri should be carefully examined with the speculum, as soon as the acute inflammation has been subdued, so as to admit of its use. If the os uteri be dilated, the mucous secretion should be removed from it, by fixing a lock of cotton on a pair of long dressing-forceps, so as to bring the vaginal injections in contact with the diseased surface. If the disease does not yield under this treatment, a solution of Sulphate of Zinc (gr. x to xx to $\frac{3}{2}$ j of Water), or the Sesqui-Carbonate of Potassa (gr. xv to xx to $\frac{3}{2}$ j of Water), or the Nitrate of Silver (gr. xx to $\frac{3}{2}$ j to $\frac{3}{2}$ j of Water), should be applied to the cavity of the cervix, with a camel's hair pencil, and repeated as often as may be necessary. In all respects, gonorrhœal inflammation should be treated in the same manner as simple inflammation of the cervix. (See Inflammation of the Cervix Uteri.)

363. Many causes contribute to render the treatment of gonorrhœa in the female tedious and unsatisfactory, and a disease more difficult to cure in this sex than in the male. The recurrence of the menstrual period is constantly interfering with the success of treatment, and a gonorrhœa that has been almost subdued in the interval, is renewed with all its intensity at the time of menstruation. Still, if the course that I have recommended be judiciously pursued, the disease may be entirely eradicated. The disease, if seen in the acute stage, may be quickly removed; the chronic inflammation of the parts being the condition where the most difficulty will be experienced.

SYPHILIS.

364. Syphilis in the female differs but little from the same disease in the male, so far as the primary disease is concerned; there is, however, a marked difference in the sequences of the disease, so far as the genital organs are concerned, and this difference, it appears to me, is sufficient to call for a description of the disease in a work of this kind. The differences that we have to notice in the primary disease, consist entirely in the anatomical differences in the structures involved; while the

secondary effects differ not only as regards the structure, but also as regards the functions of the entire uterine system.

365. By syphilis, we understand a specific disease, arising from sexual intercourse, and transmissible by the contact of its own specific pus with a tender surface, by inoculation into the system through the medium of the secretions, or by hereditary taint, under certain special conditions. It has been supposed by some authors, that syphilis and gonorrhea arise from one and the same poison, the difference in the two being merely a difference in the intensity of the disease. This opinion was based upon the fact, that females suffering from venereal disease would communicate gonorrhea to one person and syphilis to another, both having connection with one woman, and at short intervals from each other. Ricord has fully proved this opinion to be erroneous; he has established beyond cavil, that the gonorrhreal discharge, when inoculated on the skin or mucous membrane, never, under any circumstances, produces a chancre; and, conversely, that the pus of chancre can never be made to give rise to gonorrhea. He has, however, given an explanation of the fact upon which the above opinion was founded; it is now well known that a woman may be affected with gonorrhea and deep seated chancre on the uterus at the same time, so that, although supposed to be laboring under one, she might easily communicate both or either of the diseases; the true nature of her disease being only ascertainable by the speculum.

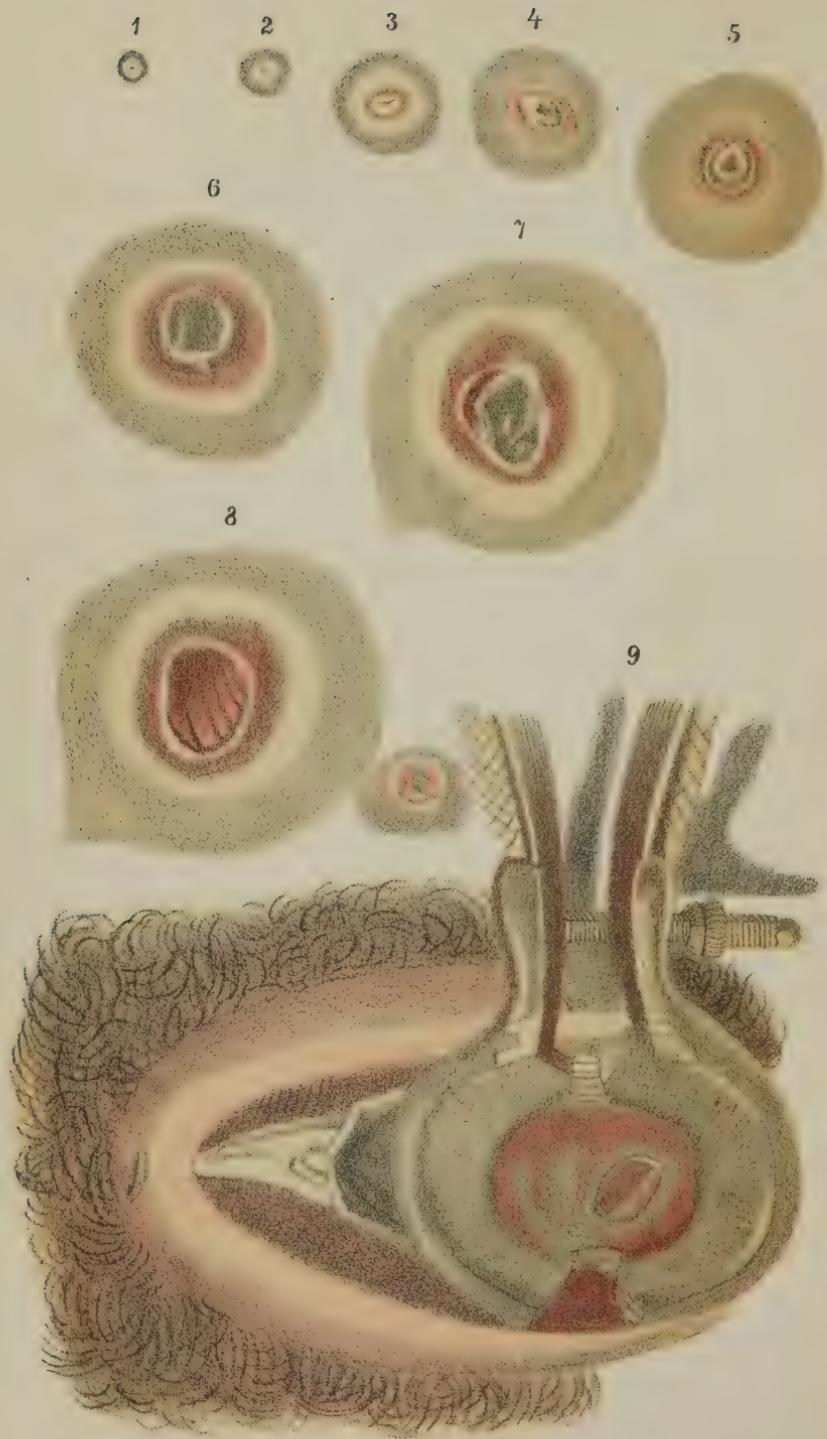
366. Ricord divides syphilis into three distinct stages. The first stage includes *primary* symptoms, which are the immediate effect of the morbid cause, occurring on the spot where the virulent agent has been deposited; as, for example, chancres. The second stage comprehends *secondary* symptoms, which are the sequence of absorption into the system of the virulent cause. They are hereditary, but not capable of transmission by inoculation. For an example, certain affections of the skin and mucous membrane, iritis, etc. The third stage comprises *tertiary* symptoms, not capable of being transmitted by inoculation, nor hereditary, but subject to pathological transformations and alterations of the sub-mucous and sub-cutaneous, or of the fibrous or osseous tissues.

Primary syphilis, or chancre, may be developed upon any part

of the female organs of generation. Its most common location, however, is in the external parts, as the labia majora, the nymphæ, the folds of mucous membrane surrounding the clitoris, at the orifice or other parts of the vagina, or at the meatus urinarius. Chancres yielding a characteristic pustule by inoculation, are of very rare occurrence on the cervix uteri, though they have been met with in this situation, and even at the os uteri, and extending into the cavity of the cervix. They have likewise been met with just within the orifice of the urethra, on the mons veneris, on the perineum, the verge of the anus, and within the sphincter ani.

367. According to M. Erichsen, "when chancres are caught in connection, they usually commence with a small excoriation, which appears to have been directly inoculated with the specific poison. In other cases, again, though more rarely, they may be seen at first in the shape of a small pointed pustule, which speedily breaks, leaving an ulcer of a specific character in its site. Very generally, however, this pustule escapes observation, and the disease is presented in the first instance as an ulcer. The chancreous ulcer, whatever form it assumes, seldom makes its appearance until a few days—five or six—after connection. In some cases, however, I have observed it, evidently from the infection of a fissure or crack, on the day following impure intercourse, and, occasionally, in rare instances, it does not occur until a much later period than that which has been mentioned.

368. "Whatever may be the appearances presented by a chancre, there can no longer be any doubt that the disease arises from one kind of virus only, the modifications in the sore depending on its situation, the constitution of the patient, and occasionally on that of the individual who communicates the infection. That this is so, is evident from the fact that any chancre, when inoculated, reverts to one typical form, and that, however much chancres may ultimately differ, they all present the same characters during their early stages. The progress of a chancre that has been artificially inoculated on any part of the cutaneous surface is as follows, and its study will serve to elucidate what takes place under other circumstances. During the first twenty-four hours after the introduction of the specific pus into the skin on the point of a lancet.



we find that some inflammation is set up around the puncture, which becomes hot, red, and itchy. About the third or fourth day, a pointed pustule is produced, which is at first deep-set, but becomes on the following day more superficial, with some depression in the center, resembling pretty closely a small-pox pustule; on close examination this will be found not to be a true pustule, but rather a mass of epithelial scales and pus not included in a distinct wall. On the fifth day it has become hard at the base, apparently from the infiltration of plastic matter, and on the sixth, it has usually dried, forming a small round scab, and leaving an ulcer, which presents the typical characters of a true chancre, being circular and depressed, with a foul grayish surface that can not be cleansed, sharp cut edges, a hard base, and an angry looking red areola around it. This is the typical chancre, and these are the appearances that every true syphilitic sore on the skin will present, about the fifth or sixth day after inoculation; from this time it may diverge more or less completely from these characters, but will yet, if inoculated at any time during the poisonous stage, produce an ulcer that will run the specific course up to the same period, after which it may in its turn again deviate into one or other of the special forms that chancres occasionally assume. When inoculated on a mucous surface, chancres do not so early assume an indurated character around their base."

369. By reference to plate I., the progress of an inoculated chancre may be seen from its commencement to the fully-formed chancre.

Fig. 2, shows the result of the inoculation two hours after the matter was inserted by the lancet; already may be marked a tumefaction of the tissues, and in the center is seen the puncture made by the lancet, surrounded by a reddish areola of small extent, almost confining to the projecting parts.

Fig. 3. Drawing six hours and a half after inoculation. The inoculation is still more elevated. The areola is of a deeper color.

Fig. 4. Drawing twenty-four hours after inoculation. The projecting parts appear clearly defined, and their base is of a deep-red hue. On the summit is seen a grayish point, corres-

ponding to the incision of the lancet. The inflammatory areola has comparatively greatly extended.

Fig. 5. Drawing in thirty-one hours. The pustule is formed. The grayish point of the morning has become completely black, and forms a small gangrenous eschar, around which the epidermis is elevated by the pus.

Fig. 6. Drawing forty-eight hours after inoculation. All the elements of the pustule are progressing.

Fig. 7. Drawing three days after inoculation. General progress. We remark an irregularity in the periphery of the pustule, which during the night discharged some pus, and in the center of which the gangrenous eschar is depressed, and appears to be adherent to the subjacent parts.

Fig. 8. Drawing four days after inoculation. General progress. The pustule is lacerated at several points, and appears to be free from pus.

Fig. 9. Drawing five days after inoculation. General progress with the exception of the inflammatory areola, which appears less intense. The irregular eschar, covering the wound made by inoculation, was removed, and beneath it is seen a roseate base studded with yellow spots. On the edges which are scarcely separated, is seen a whitish border formed by the epidermis.

We may distinguish three varieties of chancres:

370. *First, The simple chancre*, characterized by the absence of induration, and but a low degree of irritability, or inflammation. It consists of an excoriation of shallow character, with sharp cut edges, and somewhat circular in shape, and having a tawny-grayish, or yellowish surface, surrounded with a narrow red areola; it is in many cases attended with much heat and itching. This is the variety of chancre most generally found on the female genitals.

371. *Second, The indurated or true Hunterian chancre*; this is very rarely met with. It is characterized by the induration of its edges and base, its circular shape, its elevation above the surrounding parts, and the very adherent gray slough that covers its surface.

372. *Third*, The sloughing or phagedenic chancre; this is characterized by its more or less rapid destruction of the tissues of the parts. One variety of this is not covered by a slough; it spreads rapidly, has sharp cut edges, and is attended with some inflammatory action. The other variety is covered by a slough, either white, gray, or black; it has the same tendency to erosion, though in general it does not progress so fast. Chancres of the vulva or vagina are easily detected; those, however, which arise on the os uteri may exist for a great length of time, sometimes, in fact, until secondary symptoms are observed, before there are sufficient local symptoms manifest to justify an examination. Ricord states that non-indurated chancres of the neck of the uterus are often painful, especially on pressure, and in sexual intercourse. They cause a sensation of weight at the fundament, and pain in the lumbar and hypogastric region. Like chancres in other places, they have a greater tendency to extend and assume a phagedenic form. The suppuration to which they give rise is abundant, may stimulate a vaginal discharge, and give rise to a suspicion of blennorrhagia, and subsequently to the transmission of chancres to the male, by a woman who had only a discharge. The presence of these symptoms should cause the physician to make a rigid examination of the parts with the speculum. No matter what the nature of the disease is, the symptoms point directly to the cervix as the seat of it, and an examination should be instituted, or the patient given up to some practitioner who depends more upon the knowledge of the agents he uses, than upon the character of the disease for which he uses them. In my practice I never take no for an answer. I must know exactly the nature of the disease, before prescribing, and if, from motives of delicacy, this is denied, I advise them to employ some one else.

373. Upon examination, a chancre of the cervix may be distinguished from any other ulceration, by its circular form, by its well-defined edges, by the red areola which surrounds it, by the grayish slough which covers it, and especially, by the results of inoculation. There have been doubts raised, however, in regard to this last means of diagnosis, some ulcers exactly resembling

chancre, not producing the characteristic pustule; but the evidence is positive, if the inoculation succeeds.

374. Plate I., Fig. 1, presents an illustration of chancre on the posterior lip of the uterus. It has assumed a slight phage-tic character, and has lost its circular appearance. On the left thigh may be seen the characteristic pustule produced by inoculation.

375. Syphilis in the female very rarely produces enlargement of the inguinal lymphatic glands, or *bubo*, without the chancre is located on the labia majora, and even then, it is of much less frequent occurrence than in the male.

376. The length of time that elapses between impure coition and the production of a chancre, or between the formation of a chancre and the development of one, and the manifestation of secondary symptoms, varies much in different individuals. Thus, it is said, that the period between exposure and the production of a chancre, in some few cases, has been as long as three or even six months, and in some of these cases, the primary and secondary symptoms were developed simultaneously. Again, it is stated, that the constitution may be affected in a few days after the development of the pustule. In a majority of cases, however, constitutional infection will not have taken place, until the chancre has been fully formed, and secreting the specific virus for several days.

377. *Secondary Symptoms.*—The secondary symptoms will be considered here, only so far as they affect the uterine organs and the function of reproduction. Secondary symptoms may be developed as the result of an imperfectly cured chancre on the external parts, or from the absorption of the virus from a sore, before any treatment was adopted; or, as the result of a virulent chancre on the cervix uteri, but which, on account of the low degree of sensibility of this part, did not manifest sufficient symptoms to direct the attention of the patient to the disease; or, when the mother, being in health, becomes impregnated by a husband, who is at the time affected by secondary syphilis, and receives the secondary disorder through the medium of the ovum. M. Ricord, the greatest modern authority in syphilis, believes that

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when the primary poison is taken, it remains for several days in a state of incubation, during which time the poison may be destroyed, without any danger of the subsequent occurrence of constitutional disease; that after this time, chancres take certain characters, and infect the whole constitution, giving rise to a train of evils, known as constitutional syphilis. He does not believe that a sore or chancre, capable of communicating syphilis by inoculation, can ever appear as a secondary symptom. He is of an opinion, that for the presence of constitutional symptoms, it is absolutely necessary that a primary sore should have preexisted, except under the conditions, namely: that a man suffering from constitutional syphilis, may impregnate a healthy woman, and the germ may, in the first place, have constitutional syphilis; and in the second, communicate it to the mother, without the existence of any primary disease in either mother or child. He does not believe in the communication of syphilis in the secretions, or by the discharges from secondary eruptions and sores. Nor does he believe, that a child affected with secondary syphilis, can communicate the disease to a healthy nurse; or, that a nurse affected with constitutional syphilis, can convey the disease to a healthy infant, through the medium of the milk.

The following are the propositions laid down by M. Ricord:

1st. The father and mother may transmit the disease to their child indifferently, if either or both of them be affected.

2d. Transmission may occur from the parents to the child, when they are affected with constitutional symptoms, or when a concealed syphilitic diathesis exists in them.

3d. The absence or existence of constitutional symptoms in parents at the moment of impregnation and conception, exerts no influence on the form the disease, which may afterward appear in the child. The distinction established by M. Cazenave between congenital and hereditary syphilis, and which is based on the absence of constitutional symptoms in the parents at the moment of generation, or which have been developed in the mother during

gestation, is totally erroneous ; and indeed M. Cazenave confesses that his opportunities of observing have not been ample.

4th. The character and period of the manifestation of the symptoms in the child are governed by the stage to which the disease had advanced in the parents, at the moment of generation. The treatment to which the parents were subjected may also retard, prevent, or modify the appearances of the child.

5th. If the parents are both healthy at the time of generation, and the mother contracts syphilis during gestation, she may transmit the disease to her child. Of this I have seen several examples at various periods of pregnancy, even to the seventh month inclusive.

6th. When the venereal poison is transmitted from the mother to the child during pregnancy, infection takes place through the medium of the placenta, and in this case, appears to occur after the fourth month of utero-gestation.

If the father alone be diseased at the moment of generation, an abortion may occur at any period of pregnancy. If the mother alone be diseased at the time of conception, the abortion will not take place until after the fourth month.

7th. Children born of a father or mother affected with syphilis may escape infection ; for a certain disposition to receive constitutional disease is necessary for the child as well as the adult, and this may be absent.

8th. Observations made as accurately as possible seem to prove that constitutional syphilis may be transmitted from the child to the mother during utero-gestation.

378. Dr. Tyler Smith says, "In the cases of supposed transmission of secondary syphilis between man and woman, there almost always must be the doubt of a new inoculation by primary matter. Indeed, the doubt must be constant, unless we could place implicit reliance on the truth of all the parties concerned, and this, in such cases, must seldom be possible.

"In private practice in this country, the most common mode in which syphilitic leucorrhœa of a secondary character occurs, is, where the husband has had syphilis before marriage, and is liable

to occasional outbreaks of secondary or tertiary disorders. In such cases, the ill-health of the wife dates from the first three or four months of pregnancy. Sometimes she has other secondary manifestations, such as alopecia, sore-throat, and cutaneous eruptions. In others, leucorrhœa is the chief noticeable symptom. We know that in such cases, the ovum is frequently diseased, the membranes are unhealthy, or the foetus is affected with secondary syphilis, or specific eruptions break out within a few weeks after birth. We can not wonder that in such cases the mother becomes diseased; for, by means of the foetal circulation, the blood of the male parent is brought almost as directly into contact with the female, as though a tube was placed between the vessels of the parties, and the circulating fluid allowed to interfuse. Generally, both mother and child are affected; more rarely, the mother is affected and the child remains healthy; and cases occasionally occur in which a mother bears a family of children by a husband suffering from secondary disorder, all of whom are unmistakably diseased, while she escapes apparently with perfect impunity. I believe I have seen cases in which syphilis has caused the death of the mother, or permanent loss of health, while the child remained unaffected; and I am sure I have seen cases in which many children have been destroyed, the mother remaining pure. Women imbued with the syphilitic poison frequently bear large families; but I have seen cases in which, apparently without any other cause than the syphilitic taint, permanent sterility has followed upon the pregnancy which occasioned the infection. When the mother is once affected, and no treatment is resorted to by the husband, a fresh dose of the secondary poison is imparted at each pregnancy. As regards the length of time after an attack of primary syphilis, during which a man may beget a diseased ovum, it is difficult to give a positive opinion. It is more a matter of temperament and constitution than of years. Some habits throw off the syphilitic poison readily, and, to all appearances, completely; others retain it for a long course of time. It adheres, *cæteris paribus*, less tenaciously to the constitution in youth, than when the disease has been contracted during mature manhood.

379. "The appearances presented by secondary syphilitic leucorrhea do not differ materially from the appearances presented in other severe cases of leucorrhea. It is this circumstance which has probably led to its doubtful recognition as a form of secondary syphilitic disorder. Its chief characteristics are, its existence in connection with frequent abortions, and with other secondary symptoms, and the difficulty experienced in its cure except by anti-syphilitic remedies. In secondary leucorrhea, the cervix uteri is generally soft, swollen, injected, and entirely denuded of epithelium. It hangs loosely in the vagina, from the weakening of the vaginal walls. Eruptions are often met with in the upper part of the vagina, and upon the external portion of the cervix.* The os uteri often gapes so as to exhibit the rugæ of the lower part of the cervix, and a thin yellow purulent matter, which, when mixed with morbid secretions from the cervical canal, looks something like honey, or honey and water, exudes in considerable quantity from the lower part of the uterus. Occasionally, warty growths are found upon the os uteri, and the vesicles of Naboth are sometimes present at the os uteri. The amount of discharge in such cases is frequently very great."

380. Secondary ulcerations, the result of constitutional syphilis, may also be developed upon the cervix uteri. It is very difficult, however, if not impossible, to distinguish between these and ulceration, the result of simple inflammation. There is no doubt but that ulceration of the cervix uteri is much more common among public prostitutes than in any other class. Dr. Bennet states, that while he was in charge of a female skin-ward in the Hospital, St. Louis, there was always a great number of syphilitic skin diseases; these he carefully examined with the speculum, to ascertain the state of the genital organs. The result of this examination was, that of all who presented symptoms of inflammation of the cervix, he found the cervix ulcerated, and slightly indurated; and of those who presented no such symptoms, he found three out of four, "perhaps more," also presented ulcers on the cervix. Most of these patients were young women, who had never borne children, or had been confined several years previously, and were under treatment for syphilitic psoriasis,

* See Figs. 3 and 4, Plate II.

litchen, rupia, etc. When questioned narrowly, they all admitted that they experienced slight hypogastric pain, that congress had been rather painful for some time; and some, that they had, likewise, a slight leucorrhæal discharge. They had not, however, paid any attention to these symptoms. What was the nature of these ulcerations? Were they syphilitic, modified chancre, or secondary ulcerations, or were they merely inflammatory sores? In their appearance I could discover little or no difference from the ulcerations observed in non-syphilitic patients, and was, therefore, inclined to deny their general syphilitic nature. Some were large, some were small; some had a well-defined margin; others not; some were covered with unhealthy granulations, others with small, florid, healthy granulations, while others presented a membranous film.

381. We have, then, but slight ground upon which to form a diagnosis of secondary syphilitic ulceration. If the patient present any other secondary symptoms, and the ulceration is somewhat circular in form, with well-defined edges, and has a coppery-red areola, with or without small coppery-red granulations on a whitish base, scattered over the surface of the cervix, we will probably be justified in considering it the result of secondary syphilis.

382. Syphilitic vegetations may be developed upon any part of the genital mucous membrane, though they are generally found upon the vulva, or the orifice of the vagina. Some of these vegetations resemble warts; they are pale, small, and arise by a base which is generally as large if not the largest portion of the growth. Again, there is another variety, which arises from a larger or smaller pedicle; they project farther from the mucous membrane, and are of a deep-red color; they have been named the strawberry or raspberry excrescences. (See Figure 2, Plate II.) These vegetations often give rise to a very disagreeable pruritus, and they generally give rise to a discharge, which is sometimes of a very offensive odor. There is no doubt of the contagious nature of these vegetations, not that they will reproduce either primary or secondary syphilis, but that they themselves are capable of being directly transmitted. Thus, the

male suffering from these vegetations, may transmit them to the female, and *vice versa*.

383. *Mucous tubercles* is another form of syphilis as it appears upon the genital organs and other parts.* They are much more frequently seen in the female than in the male, owing to the extent of the mucous membrane lining the genital organs, and the delicacy of the skin. Though generally considered a consecutive accident, yet in females, it is said, that they most frequently exist as a primary symptom. They are generally found about the vulva or anus, though they may be developed in any other portion of the body; they may appear singly, or occur in groups; generally where there is one, more is developed. According to Vidal, when seated on the mucous membranes, the color is more or less of a lively red, while on the skin, in a majority of cases, they are brown; around them the coppery areola of the syphilitic eruptions is often observed. The surface is sometimes smooth, slightly fungous, and sometimes presents a macerated appearance. Occasionally they are completely fungus, and of a violet color. They may have an eroded and even ulcerated appearance, resembling that of chancre; especially that form known as the *ulcus elevatum*. They generally secrete a serous-like, or sero-purulent fluid, which has a peculiar and repulsive odor. The pus becomes more strongly marked, as the ulceration is established, and the pustules are irritated.

384. *On the neck of the uterus*, the mucous tubercle is often of a reddish-gray color, very round, distinct, and a little larger than a lentil. It has been seen at the same time, on both sides of the upper and lower lip.

These growths may appear in one or two weeks after coition, or some time after the development of a chancre, or they may appear as the first symptom; they are then primary. M. Ricord denies the contagiousness of mucous tubercles; other writers, among whom are M. Vidal, M. Waller, and Wallace, have successfully proved their transmissibility.

385. *Diagnosis*.—In many cases of female disease, it becomes of the greatest importance to ascertain exactly whether there is

* See Fig. 2, Plate II.

a syphilitic infection of the system. We have already noticed the principal effects of this protean malady, so far as the effects differ in the two sexes ; and we have seen not only the health of the patient affected by the disease, but also her offspring.

386. The presence of syphilitic disease of the skin, the exanthemata, squamae, vesiculae, pustulae, papulae, tubercula, etc., as well as the characteristic secondary symptoms of the mucous membrane, or alopecia, or the falling off of the hair, will be sufficient evidence to cause us to regard either structural or functional disease of the uterine organs to be either a result of secondary syphilis, or to be greatly aggravated by it. On this point Mr. Langston Parker says : "I must think, with Mr. Whitehead, that the greatest majority of morbid conditions which are found on the lips and orifice of the uterus, in females who are laboring under a confirmed venereal taint, are of syphilitic character ; probably they are secondary, or rather constitutional. It is rare to find the uterus free from disease, where a confirmed constitutional taint exists ; the os is either surrounded by a ring of inflammation, or the lips are everted and red, and more or less thickened ; again, superficial ulcers exist, either having a granular appearance, or, what is less common, the edges of the ulcer well defined, and its edges elevated and hard." M. Gilbert says, we must admit that this granular condition, or the ulceration of the os uteri, is due to syphilis, and belongs most commonly to secondary syphilis. Again, when we find a patient habitually aborting after the fourth month, the probability of constitutional syphilis should cause a very careful examination and inquiry, in regard to this disease. Syphilis, at this day, has become of such common occurrence, especially secondary symptoms, that the probability of this disease being present should always be borne in mind. The character of the patient has not that weight here that it would have, were constitutional syphilis always and invariably the result of primary disease in the female. But we have already seen that a female may become infected through the ovum, the husband having constitutional syphilis, though not aware of it, and thus communicating it to the wife.

If abortion habitually occur before the fourth month, th

condition of the husband should be ascertained, if possible, whether he has had syphilis, the time that has elapsed since the primary symptoms, and whether secondary symptoms have ever been manifested.

387. These inquiries may seem out of place to those who practice medicine in the country, where a case of venereal disease is uncommon, but to those who practice in large cities, their necessity will be at once acknowledged. It is a humiliating fact, but one that is true, that a majority of young men who have been raised in the city, have, at some period of their lives, been affected with syphilis. This may have been eradicated, but still the presence of secondary syphilis is extremely common, as the consulting-rooms of our physicians will show. It is also a noted fact, that under the treatment of those who make venereal disease a speciality, the disease is often not eradicated from the system, the treatment merely checking the present symptoms, but which are liable to recur from any exposure or excess. Under these circumstances he marries, when the disease, although secondary, may be transmitted to both wife and children.

388. *Treatment.*—We have first to consider the treatment of primary syphilis or chancre. And here the question arises, can we prevent the infection of the system by destroying the original sore? and if so, during what length of time may the *abortive* treatment prove successful? In many cases, no doubt, the destruction of the syphilitic sore may prove entirely effectual, in removing every trace of the specific virus from the system; but to accomplish this, it is necessary that the sore be destroyed before the proper secreting structure of the chancre is formed, in fact, in the pustular stage. This, even, is not always sufficient, for the syphilitic pus deposited upon a mucous membrane may be absorbed without producing either pustule or chancre, as we see in primary bubo, or *the bubo d'emblés*. Sometimes, however, a chancre may be fully formed, giving rise to the characteristic pustule by inoculation, and still, through some constitutional peculiarity of the patient, the virus is not carried into the system; while, therefore, it is good treatment to adopt the abortive plan in the first stages of the disease, *it should always be done in connec-*

tion with the same constitutional treatment that we would adopt if we were satisfied that the virus had already been absorbed.

389. Though the abortive treatment will often prove successful in males, it can seldom be resorted to in females, from the fact that the disease produces less uneasiness with them, not being severe enough to call their attention to the seat of the affection, and because the female genitals being much more liable to disease than the male, the mind is not so impressed with their importance. Thus, the pustular stage, in nearly every case, is passed, and the sore presented to the surgeon is a fully-formed chancre, probably of some weeks' duration. In some cases, however, through accident, and in others who have had chancre before, and are, therefore, watching the first symptoms, the physician may be able to adopt the abortive treatment with some probability of success.

This treatment consists in thoroughly destroying the primary sore with caustic, and thus converting it into a healthy ulcer. For this purpose I use the Potassa Fusa, though many others use the Strong Nitric Acid, the Nitrate of Silver, the Tincture of Chloride of Iron, etc. In using either of these agents, if the chancre be in the pustular stage, it should be opened, and the contained matter carefully removed; then apply the caustic to the surface of the sore sufficiently to entirely disorganize its base. If the Potassa Fusa is used, its application for a few seconds will be sufficient, and as soon as the cauterization is accomplished, the sore should be covered with Lint, saturated in Vinegar and Water. As a general rule, *cauterization, to prevent constitutional infection, should be resorted to before the fifth day, and even then it may prove ineffectual.*

390. In very many cases, a good Mayer's ointment, (made strictly according to the formula) will be the best dressing after cauterization. It is sufficiently tenacious to remain where placed, protects the part thoroughly, and gives the necessary stimulation. The sore heals by granulation, and the part needs rest and protection. In some cases an astringent and stimulant application is necessary, and then we think of the old-fashioned dressing of Port Wine and Tannin—R Port Wine, 5vj.; Tannic Acid, 3ij.;

apply with lint. I should use this application when the part was spongy and deep-colored. A solution of Permanaganate of Potash will also be found a good dressing in some of these cases; and once in a while a weak solution of Carbolic Acid.

Sometimes we find that a dry dressing answers a better purpose: most usually in cases where there is a free and somewhat ichorous secretion. If the part is tumid and pallid, I would use Sub-nitrate of Bismuth; if pallid but spongy, Oxide of Zinc. Dry Calomel has been very highly recommended as a dressing for some chancres, but I doubt whether it possesses any advantages over those named. Once in a while a case will present in which the chancre is spongy, secretes profusely, and is very irritable, when Oxide of Lead (powdered white lead) will serve our purpose best. But whatever means are employed, it is certainly good treatment to destroy the secreting surface of the sore, and prevent the further absorption of the virus; if by this means the chancre can be more readily healed, providing that by this means the patient and practitioner is not lulled into a fancied security, and thereby omit the use of proper constitutional measures.

391. In the female, there is rarely any symptoms to contraindicate the use of the caustic; it may be, therefore, employed in any stage of the simple chancre. Here, I still prefer the caustic Potassa, using it to a sufficient extent to destroy the secreting surface of the ulcer, using the acidulated water afterward to prevent any extension of the cauterization, and then applying a poultice of *Ulmus Fulva*, until the slough has separated. If the ulcer should be granulating in any part of its surface, this part should be shielded from the action of the caustic, by a small pledget of cotton saturated in vinegar and water. This cauterization changes the action of the tissues, and we have left a simple ulcer.

To this ulcer, we may apply the Mild Zinc Ointment, until cicatrization is complete. Or, we may use, if the ulcer does not heal with this application, a weak solution of the Sulphate of Zinc, Nitrate of Silver, or Alum, or what will be found preferable in many cases, a solution of Tannin in port wine. If the chancre assume a phagedenic character, the patient should be confined to her bed, and elm poultices employed, until the inflammation is

removed, when the Mayev's Ointment, or some of the other dressings named, should be applied. When there is not much inflammation or irritability, the phagedna may be sooner stopped by the use of caustics; the one that is most highly recommended, is the Strong Nitric Acid. This cauterization should be deep, and repeated sufficiently often to check the progress of the gangrene. The dressings in these cases, should be frequently changed, as the discharge is often very copious. In addition to these local measures, the patient should be put upon the use of the vegetable tonics, and some of the feruginous preparations. The diet should likewise be nutritious, but easily digested.

In all cases of primary syphilis, strict attention should be paid to the habits of the patient, as much rest should be taken as possible, and all exposure avoided. The skin should be kept in a healthy condition, by the use of the bath, and if dry and husky, by the administration of some agent that will determine the circulation to the surface.

392. *Secondary Syphilis*.—Here, our dependence is placed almost entirely on the constitutional treatment, or the use of those remedies which remove the syphilitic virus from the system. We come now to consider the most important point in the treatment of syphilis, the agents by which constitutional infection may be prevented, and which will remove the syphilitic virus from the system after it has been absorbed, and produced secondary symptoms. Of these agents, I may enumerate the Iodide of Potassium, the Iodide of Iron, the Iodide of Ammonium, Phytolacea, Corydalis, Ampelopsis, Rumex, Kalmia, Thuja, Scrophularia, Alnus, etc.

393. The benefit derived from the first of these agents, the Iodide of Potassium, is so marked, that it is used by all schools of medicine. Under its administration alone, many cases of constitutional syphilis have been radically cured. Still, there are some cases in which it will fail. Under the use of small doses (from gr. ij to v,) the appetite will generally be increased, nutrition active, and the strength re-established; these doses, however, do not prove anti-syphilitic. To make the remedy effectual, it should be used in doses from gr. x to 3ss, three times a day.

394. The Iodide of Iron has similar properties to the agent above-named ; it is, however, better suited to persons of a feeble constitution, as it acts directly upon the system as a tonic and restorative. It may be administered with the agents hereafter spoken of, or in pills, according to the following formula :

B Sulphate of Iron, 3ijss.
Iodide of Potassium, 9x.
Tragacanth, gr. xxv.
Sugar (powdered), 3jss.

Make one hundred pills, from one to ten to be taken in the day.

395. The other agents named may be truly called *vegetable anti-syphilitics*, and the list of these might be considerably increased. They may be used separately or in combination. The combination of these agents that is generally employed by Eclectics, is the Compound Syrup of Stillingia ; but I prefer to select my remedies according to the case in hand. Some of them are much better given in weak infusion, but in large quantity, as the *Alnus*, *Corydalis* and *Rumex*. But others, as the *Phytolacca* and *Thuja*, may be given in quite small doses, with most excellent results.

396. While using these remedies, it is essential that strict attention should be paid to the general health of the patient ; the bowels kept regular, and the kidneys and skin stimulated to a full performance of their functions.

With the removal of the constitutional infection, by the use of the remedies above-mentioned, the local disease of the genitals is easily treated. But without this is accomplished, local applications to the diseased parts are of but little use ; for even if the local disease was subdued, the presence of the syphilitic poison in the system, would directly reproduce it. Syphilitic condylomata may be removed from the genitals, either by cauterization, the ligature, or excision. Very often, however, when the syphilitic poison has been entirely eradicated from the system by the use of constitutional remedies, these vegetations will disappear spontaneously. M. Vidal strongly recommends the following method :

R Savine,
Alum Cale. $\ddot{\text{a}}\ddot{\text{a}}$. 5jss.

Reduce to a fine powder. Wash the vegetations twice a day with red wine, and cover them afterward with a thick layer of the powder. In the course of three or four days the vegetations become feeble, and the patient may begin to remove them with the finger nails. After each separation there is a slight bloody discharge, which may be arrested by the vinous lotion, after which the powder is reapplied.

397. Mucous tubercles, like the vegetations above referred to, will often disappear under the use of proper constitutional treatment, if strict attention to cleanliness be observed. Sometimes, however, local measures become necessary. If the tubercles are not ulcerated or inflamed, the local application of the Liquor Soda Chlorinata will be found a very good application; under its use the tubercles become smaller, and rapidly disappear. If there is ulceration, the solution should be diluted until but a slight smarting sensation is produced. Or a plaster of the inspissated juice of the Phytolacea Decandra may be used with much advantage. In one very stubborn case of this kind, where the tubercles were ulcerated and gave rise to a profuse fetid secretion, I used the Extract of the Trifolium Pratense with entire success. It removed the troublesome itching which sometimes accompanies the disease, in three or four hours, and its continued application for ten days removed every trace of the tubercles.

The chronic inflammation, erosion, and ulceration of the cervix, which so often accompanies this disease, will readily yield to the treatment recommended for simple inflammation and ulceration of the cervix.

398. The functional uterine diseases, which so often appear during secondary syphilis, will, in a majority of cases, be removed, when the cause that produced them is eradicated.

In concluding the description of this disease, I can not too strongly impress the fact on the mind of the reader, that in every case of uterine disease complicated with secondary syphilis, whether that disease be structural or functional, the removal of

the syphilitic poison is the first step toward a permanent cure; and when this is removed, the local disease will yield to the usual remedies for such affections.

CHAPTER IX.

DISEASES OF THE UTERUS.

399. Diseases affecting the uterus are divided into two classes, *Structural* and *Functional*. Structural diseases are those in which the deviations from healthy action are indicated by symptoms during life, and by appearances after death, which are always the result of some, and often of very conspicuous structural lesions; while functional diseases are dependent on deviation from the natural or healthy action of any part of the uterine system, indicated by symptoms during life, which, on examination after death, are found to be unconnected with any discoverable change of structure.

400. The relative frequency of these two classes of uterine disease is hard to determine. Some practitioners look upon all diseases of the uterine system as diseases of debility, and adopt their treatment to this supposed condition. Others consider that all these diseases arise from, or consist in, a local congestion and engorgement of blood, and that they are to be relieved by remedies directed to its removal. A third theory has been successfully advocated by Dr. Bennet, and adopted by a large portion of the profession, that the majority of uterine diseases are inflammatory in their nature, and that we are sure to find, in nearly every case, inflammation, or some of its results, as ulcerations, purulent discharges, etc. This theory of uterine disease Dr. Bennet supports by a report of three hundred consecutive cases of uterine disease, occurring in hospital practice, in two hundred and forty-six of which decided inflammatory disease of the cervix uteri was present. Again, we have other practitioners

believing that a majority of these diseases arise from displacement of the uterus ; and others, that they are essentially nervous or neuralgic disorders. Many other theories in regard to the nature and cause of uterine diseases have been brought forward, and have found advocates at different times, though the ones just mentioned are the principal.

401. These views are all partially correct, yet neither of them is sufficient to account for all the morbid manifestations of these organs, nor for a majority of them, if we except the theory of Dr. Bennet.

To successfully study these diseases, it is necessary to recollect that the general principles of pathology apply to disease of the uterus the same that they do to any other organ of the body, and that any special or exclusive theory, that will not apply equally well to disease of other parts, must be fallacious.

402. As functional diseases of the uterine system involve, to a greater or less extent, both the uterus and ovaries, and as they so frequently rise from, or are aggravated by, structural diseases of these organs, their consideration will be deferred until the organic diseases of the uterus and ovaries have been described. The same anatomical arrangement will be followed here that I have adopted in the previous part of the work, classifying the diseases, as far as possible, according to the structure affected.

OCCLUSION OF THE OS UTERI.

403. This may be either congenital, or the result of disease ; and it may be either partial or complete. Congenital occlusion not unfrequently occurs with occlusion of the vagina, as has been heretofore described, though it may be present when the vagina is perfect. In either case, it is of very rare occurrence.

404. The symptoms of congenital occlusion depend altogether upon the presence of a menstrual discharge. Until the period of puberty, when this secretion takes place, this obstruction gives no sign of its presence, and in some cases reported, it had continued up to the age of forty years, without producing any difficulty ; though, in these cases, there was never any symptoms of menstruation. As soon, however, as the menstrual secretion is

established, we will find a monthly return of those symptoms accompanying menstruation; considerable uneasiness and distress, weight in the pelvis, uterine tenesmus, aching round the loins, and by degrees an increasing tumor above the pelvis, resembling in form the impregnated uterus. These symptoms will partially disappear in a few days, but will recur at each menstrual period with increased violence.

405. Acquired occlusion may depend upon various accidental causes. Thus, it may arise from severe inflammation of the cervix uteri, from mechanical lacerations, from the use of caustics, applied to the cervix or its canal, and as the sequelæ of labor. The symptoms of acquired occlusion are the same as above described.

Some cases have been reported in which occlusion occurred during pregnancy. A case of this kind is reported by Prof. Bedford.

406. *Diagnosis.*—In cases where there is considerable accumulation, with enlargement of the uterus, it would be very easy to make a mistake in the diagnosis, if care was not used in making an examination. In congenital occlusion, the absence of the menstrual secretion, with the monthly recurrence of the symptoms, should lead us to suspect that the cause of the difficulty was retention of the menstrual blood. Upon making an examination, if the vagina be found perfect, the careful examination of the os with the uterine sound will reveal that the exit from the uterus is impervious. If the occlusion is acquired, some difficulty may be experienced in determining whether the suppression of the menses is not due to pregnancy. Yet here the recurrence of the symptoms with no discharge, will be sufficient to make us suspect the difficulty.

407. *Treatment.*—In order to open the occluded os or cervical canal, we might first attempt to pass up an ordinary sound, with the view of breaking down the obstructions, if possible, as, in some cases, the occlusion is but slight. If this does not succeed, the opening may be made with the trocar or bistoury. We may use the speculum here with much advantage, bringing the cervix fairly into view; the trocar should be placed as near as possible to the

situation of the os uteri, and a perforation made by pressing it upward, until the contents escape. The canula ought to be left in the wound after the trocar is withdrawn, until the uterus is emptied.

When the fluid has been entirely discharged, a bandage should be applied to support the abdomen, and the patient placed in bed. The vagina should be syringed out two or three times a day, until the collected blood has all drained away, when an elastic bougie should be introduced through the cervix, and kept there, in order to prevent the closure of the uterine orifice.

CONGESTION OF THE CERVIX UTERI.

408. Congestion of the cervix uteri is of very frequent occurrence; it is, indeed, one of the most common diseases to which women are subject. During the normal performance of the menstrual function, the uterus and ovaries receive an increased supply of blood, and there is, consequently, slight and temporary congestion, though this does not affect the cervix to so great an extent as the body of the uterus. This congestion is, however, removed as soon as secretion is fairly established. If the cervix uteri is examined at the commencement of menstruation, it will be found to be more voluminous, and of a deeper color; if after the secretion is fairly established, it will be found slightly congested and near its natural size, the os being larger and more open. As soon as menstruation ceases, the cervix and os will be found in their normal conditions.

409. When this normal congestion is increased from any cause, and continues through the menstrual interval, we then consider it a disease. As congestion in the first stage of inflammation, it may rapidly assume an inflammatory form, though in very many cases, it continues for months a simple congestion.

410. *Symptoms.*—In many cases, the symptoms are so slight that the patient makes no complaint for some time. If, however, it continues, each return of the menstrual period will be accompanied with greater suffering; the menstrual function itself does not remain long intact, sometimes becoming too profuse, at others scanty, or its place supplied with a discharge nearly white; the

periodicity of the discharge may also be affected. Thus, it may appear more frequently, or be retarded in its appearance. Between the menstrual periods the patient complains of a constant pain in the small of her back, of a weight and dragging down in the pelvis, which are all increased by standing, walking, or any kind of exercise. There is almost always a constant leucorrhœa, the discharge varying in character, from a thin milk-white mucus to a thick and tenacious secretion. As the disease continues, the patient will complain of lassitude and weakness, loss of appetite, and other symptoms, showing an impaired state of the general health. The symptoms described are common to congestion and inflammation; in fact, it is hard to distinguish the dividing line between the two conditions.

411. Upon making an examination, the cervix will be found enlarged, either in its whole extent, or only partially, the congestion being principally confined to one of the lips of the os. It will also be found lower down in the pelvis, the increased weight of the organ causing a greater or less prolapse. Upon touching the cervix, it will be found soft, yet elastic, and having the same smooth, unctuous surface which characterizes it in health, strongly contrasting with its condition when inflamed, when it feels indurated, dry and harsh, and increased in temperature.

412. The presence of congestion of the cervix exercises an unfavorable effect on all other uterine diseases, whether functional or structural, always aggravating them and making the cure much more tedious.

413. *Causes.*—The most frequent cause of this affection is cold, especially during, or immediately after menstruation, excessive coitus, the use of irritating injections, frequent abortions, etc. It may also be caused by violent mental emotions and long-continued and violent physical efforts; in fact, from any cause producing unusual determination of blood to the uterus, without a corresponding amount of secretion, either during or in the intervals of menstruation.

414. *Treatment.*—As has been remarked, the continued recurrence of the congestion is not only a cause of present unpleasantness, but is a fruitful source of structural disease of the cervix,

uterus and ovaries. It is well, therefore, to give the case a very thorough examination, to determine the indications for remedies. I would suggest the study of *Macrotys*, *Caulophyllum*, *Pulsatilla*, *Viburnum*, *Hamamelis*, *Senecio*, *Apocynum*, *Rhus*, *Apis*, *Belladonna*, *Carbo-veg.*, *Iron* and *Copper*, in this case.

415. We find a group having dysmenorrhœa as a prominent symptom, the congestion of the cervix being attended with difficult, or it may be tardy menstruation. In this case I like the action of *Macrotys* and *Pulsatilla*, 3ss. of each (the tincture) to water 3iv.; a teaspoonful four times a day for four or five days before the menstrual period, and until the flow is well established. When there is severe expulsive pain, and especially in the early months of pregnancy, there is no remedy equal to the *Viburnum*. It may be given alone, or alternated with either of the others named, if indicated. The *Hamamelis* (Pond's Extract) is especially indicated when the pelvic tissues are full, feeble, and there is general venous congestion. In the majority of these cases the patient will also suffer from hemorrhoids. The dose will be one-fourth or one-third of a teaspoonful four times a day. The *Apocynum* is especially indicated by the œdema of the feet which characterizes some cases, though examination will sometimes show a similar condition of the vulva and other tissues. The *Carbo-veg.* is the remedy when the menstrual flow continues long (passive) and recurs too frequently. *Cuprum* is the blood-maker in these cases.

416. Mild astringent and tonic injections sometimes prove useful. If there is much leucorrhœal discharge, injections of *Salicylic Acid* and *Borax*, *Chlorate of Potash*, and *Sulphate of Zinc*, or *Alum*, may be used.

Tonics and restoratives will sometimes be indicated, and in all cases a good diet, with rest, physical and mental, will aid much in effecting a permanent cure. In some cases coitus must be prohibited for some time, as well as the use of that modern cause of uterine disease—the sewing machine.

INFLAMMATION OF THE CERVIX.

417. Inflammation of the cervix uteri has been investigated of late years with great care, and at this time, it has assumed a great

importance, with uterine pathologists. These investigations were stimulated by the work of Dr. Bennet, on Inflammation of the Uterus, published in 1845. In this work, he advanced the theory, that the majority of uterine diseases were either essentially inflammatory, or that they arose from, or were kept up by inflammation. In his classification and description of uterine disease, inflammation of the cervix uteri and its results, hold a prominent place, from the fact, that it was the most common disease, being met with in five out of every six cases of uterine disease, and from the serious train of consequences which arose from it, and which, by other authors and practitioners, had been considered as the result of other affections. Since the views of Dr. Bennet have been made known, they have been adopted by many of the most successful practitioners in all parts of the world, yet, there are many, who having the same opportunities for investigation as Dr. Bennet, deny that this disease is of such frequent occurrence. There is no difference, however, between authors, so far as the description of the disease is concerned, the main difference being as to its frequency, and its so-called results, ulceration, erosion, etc.

418. So far as my experience has extended, I am inclined to adopt the views of Dr. Bennet, as thus far I have found them borne out by the results of practice. I would especially urge my readers, to bear in mind the symptoms of this affection, when examining cases of uterine disease; as it will often be found, that what seems to be a functional affection, upon a superficial examination, has its origin, or is kept up by inflammation of the cervix.

In the description of the symptoms and consequences of this disease, I have principally depended upon Dr. Bennet's minute treatise on this subject.

419. *Causes.*—The physiological functions of the uterus, menstruation and gestation, by the changes which they produce in the condition of the organ, make it more liable to inflammatory action, than any other portion of the system. Thus, during the period of menstruation, the uterine system remains in a state of physiological congestion, and at this time it has a high degree of vitiolation, and is peculiarly susceptible to all causes of disease, as cold,

atmospherical vicissitudes, etc. The menstrual secretion is liable to be prevented, diminished, increased, or suddenly arrested, by many other causes than those named, either mental, social or pathological; and whenever this is the case, the natural uterine congestion may become morbid, and thus give rise to inflammation. These causes act both in the married and single state, yet, in the last, the disease is not of such frequent occurrence. In the married state, the cervix uteri is exposed to another fruitful cause of inflammation, even when conception does not take place. The physiological congestion and excitement which accompany intercourse, may, if too frequently renewed, give rise to inflammation, and the same results may be occasioned directly by physical contusion of the organ itself. Gestation likewise increases the susceptibility of the uterus to disease, and this susceptibility appears to be more manifest in the cervix than in any other portion of the organ. At this time, the structure of the uterus undergoes a complete transformation; its tissue, which before was of almost a cartilaginous hardness, now assumes the characteristics of muscular structure; the arteries and veins previously so small as to be with difficulty detected, now become enlarged to an enormous extent, and the entire organ becomes one of the most, instead of one of the least vascular in the human economy. This condition, therefore, constitutes a predisposing cause of inflammation, not, however, during pregnancy, for the uterine system appears to be peculiarly exempt from inflammation at this time, but from the fact, that in the involution of the uterus, the cervix never regains its former condition; it still remains voluminous, looser in texture, and more plentifully supplied with blood, and it has, therefore, a greater susceptibility to disease.

420. Parturition is also a frequent cause of inflammation and ulceration of the cervix, as it is frequently followed by inflammation of the uterus involving the cervix, which may perpetuate itself in the latter region, even when it has been subdued in the body of the organ, or it may occasion inflammation of the cervix alone, other parts of the uterine system not being simultaneously affected.

421. In addition to the predisposing causes named, inflamma-

tion of the cervix may also be the result of the extension of vaginitis, blennorrhagic or non-blennorrhagic, or, it may occur like all other phlegmasiae, without being traceable to any particular cause.

422. *Symptoms.*—When the mucous membrane which covers the cervix is inflamed, it ceases to present, to the touch, the unctuous surface which characterizes it in health. If the inflammation extends to the deep-seated structures, or if it commences there, the cervix is more or less indurated, as well as enlarged, from the interstitial effusion that takes place. When the uterine neck is thus increased in weight, it nearly always falls more or less in the vaginal cavity, so as to approximate the vulva. In married females it is also generally *retroverted*, owing to physical pressure in congress. When the inflamed cervix is brought into view by the speculum, its surface is found to offer a vivid, red tinge, instead of the pale rose-color of health. It may present a uniform red hue, and be dotted with florid, red papulae, or with white pustules, consisting of mucous glands, hypertrophied or distended with muco-pus; or, it may offer any of the shades between the bright red of arterial blood, and the livid tinge of venous blood, according to the state of the circulation. On the inflamed surface we find a certain amount of muco-pus, which generally requires to be wiped off before the state of the mucous membrane can be clearly ascertained. Dr. Bennet attaches great importance to the presence of muco-pus as an evidence of inflammation, for both redness and tumefaction of the cervix may be produced by mere congestion, especially if it is carried to a morbid extent. This muco pus must not be confounded with the abundant white secretion which is frequently found in this region, and which is the result of congestion, and not of inflammation. Sometimes the inflamed cervix presents membranous patches, which are principally observed around the os, though they may occur on any part of the cervix.

423. In nearly every case of inflammation of the cervix uteri, there is a morbid dilatation of the cervical cavity, and to this dilatation, Dr. Bennet attaches great importance, as a pathognomonic symptom. He says: "Whenever the finger, instead of passing

over a scarcely perceptible orifice, meets with a well-marked depression, into which its extremity may be inserted to a greater or less extent, we may conclude that inflammation, with or without ulceration, is present, and it becomes advisable to pursue the investigation further, so as to ascertain, by ocular inspection, in a satisfactory manner, the real state of the parts. The mucous membrane that lines the cavity of the cervix, when inflamed, presents a dark, livid color, which may be traced with the eye to a considerable depth, by depressing with the sound the lower lip of the os. This surface bleeds easily on being touched with a probe, especially if excoriated or ulcerated, which is not the case in the healthy condition. The inflamed mucous membrane of the cervical canal also secretes muco-pus in more or less abundance, and this muco-pus filling up the cavity, can often, with difficulty, be wiped away. I generally use, for that purpose, a small piece of cotton, inserted into the cleft of the fluid caustic-holder, which may be passed into the cavity of the cervix, owing to its dilated state, and with which the mucus may be removed. Even when there is no pus present, the cavity of the cervix is often completely filled with a glairy, transparent mucus, evidently secreted by the mucous follicles of the inflamed lining membrane. This glairy mucus, which may be compared to the uncooked white of an egg, has much attracted the attention of writers on female discharges, and is considered to be secreted by the uterine organs generally, as the result of debility; whereas, in reality, it is secreted by the cavity of the cervix, and is nearly always the concomitant of inflammation. It is sometimes produced in very great abundance, and constitutes one of the principal forms of the vaginal discharge commonly called the whites. "The presence of great quantities of this glairy mucus, along with an open state of the os uteri, may be considered as pathognomonic of inflammation of the cavity of the cervix." With inflammation of the cervix, there is frequently an extension of it to the upper part of the vagina, which will be congested and inflamed, and present the deep vascular hue and the muco-purulent secretion which characterize these conditions in a mucous membrane. If the disease be severe, and sometimes when it is not, the vagin[

and the vulva are congested, swollen, and tender, and more or less inflamed. Pruritis of the vulva is not an uncommon symptom of this affection ; it often becomes very distressing, and may or may not be accompanied with inflammation or erosion of some part of the external genitals. In these cases the common local applications for the relief of this symptom will prove of but little avail until the diseased condition of the cervix is removed.

424. This inflammation, when severe and of long continuance, sometimes extends to, or exercises a morbid influence on, the rectum and bladder. The rectum is very frequently affected in chronic uterine disease, whether of the body or the cervix. If the cervix is enlarged and indurated, it is generally thrust back mechanically so as to press on the lower bowel, the body of the uterus remaining *in situ* or being carried forward. In this case, the pressure on the lower bowel is attended with the same distressing results as when it is the body of the uterus that is retroverted and pressed upon the rectum. The faeces, meeting with a physical obstruction to their passage into the lower part of the rectum, accumulate above, and keep the upper part of the bowel permanently distended. Their passage is also attended with pain, especially if they are solid, owing to the contents of the bowel having to lift up the inflamed and indurated organ that obstructs their exit. This pain, however, is not near so great as when the body of the uterus is affected, owing to its greater sensibility. Hemorrhoids are not an unfrequent complication with this, as well as with other forms of uterine disease. The attacks of piles occur, most frequently, at the period of menstruation, when the pelvic irritability and congestion are at the greatest height. From the close relation of the bladder to the uterus, it is nearly as liable as the rectum to suffer, when the neck of the uterus is the seat of inflammatory disease. The bladder and urethra may become congested and irritable, giving rise to pain above and behind the pubis, accompanied by a frequent desire to pass water, to difficulty in its excretion, and to heat and scalding in the urethra as it passes. Owing to the fact that the cervix uteri is very scantily supplied with nerves, inflammation of it is rarely marked by pain in the part affected ; thus, pain is seldom

felt behind the pubis, the anatomical seat of the diseased cervix. Sometimes, however, the diseased cervix becomes very sensitive to pressure, so much so that coitus produces extreme pain. The locality of the pain in this disease is in the lumbo-sacral, the ovarian, and the lower hypogastric regions. The first of these, or the pain in the small of the back, is the most constant, though it is not especially symptomatic of this disease; for it may, and often does arise from any of the many diseases of this region. On the contrary, the ovarian pain may be considered all but pathognomonic of this affection. According to Dr. Bennet, "in nine cases out of ten, it is the left ovarian region alone, and not the right, or both, that is the seat of pain. This localization of the pain produced by inflammation and ulceration of the cervix uteri, in the left ovarian region, is, perhaps, connected with some peculiarity of the distribution of the uterine nerves, but I have, hitherto, been unable to discover any anatomical reason for the preference thus shown. The fact, however, is undeniable, and renders the existence of a dull, aching, constant, circumscribed pain in the left ovarian region, all but pathognomonic of inflammatory disease of the cervix uteri." The hypogastric pain is of much rarer occurrence than either of the others; it arises from pain in the neck of the uterus, and is felt above and behind the pubis. It is seldom circumscribed, like the ovarian pain, but radiates all over the lower hypogastric region.

425. Inflammation of the cervix uteri very rarely exists for any length of time, without unfavorably modifying the function of menstruation. Thus, it very often produces dysmenorrhea, and when menstruation, previously easy, becomes painful, we may suspect the presence of inflammation of the cervix. It may also influence the periodicity or quantity of the menstrual excretion, either lengthening or shortening the intervals, or the duration of the flow; or increasing or diminishing the quantity. From the commencement of inflammation of the cervix uteri, the health gradually deteriorates, though this does not become marked until it has continued for some time, without the patient has naturally a feeble constitution. The first symptoms of constitutional affection will be observed in the function of digestion, caused by

a transmission of the local irritation to the sympathetic nerve supplying the abdominal viscera. We see an illustration of this sympathetic connection between the uterus and digestive organs, in the first months of pregnancy, in the morning sickness, depraved or vitiated appetite, etc. The extent to which this function becomes morbidly modified, varies in different individuals; thus, in some, digestion is merely weakened, while in others all the symptoms of dyspepsia are manifested, sometimes in an aggravated degree. The appetite may be either diminished in these cases, or it may be morbidly increased or perverted. With this disturbance of the digestive functions, there is often a torpor of the excretory organs, the skin is harsh and rough to the touch, the kidneys do not properly perform their functions, and the bowels are either habitually constipated, or else there is an alternation between constipation and diarrhea, the patient being affected with first one and then the other. From what has been already stated, we should suppose that if the disease continues, as it often does, for months and even years, the patient would become greatly debilitated, and this is the case; patients laboring under this affection present a blanched and ex-sanguined appearance; they are listless, having no desire to take exercise, and are often the subjects of hysteria.

426. *Treatment.*—The treatment of inflammation of the cervix uteri will have to be varied according to the severity of the disease, the extent of the inflammation, the length of time it has existed, and the degree of constitutional disturbance present. Simple inflammation of the cervix of recent date, rarely comes under the care of the physician; it is only when the inflammation has extended to the deep tissues of the cervix, or has continued so long, that the general health is affected, that he is consulted.

427. In the treatment of this affection, we make use of both general and local medication, the first to restore the general health, correct the secretions, and to subdue the inflammation; the local measures are entirely directed to subdue the local inflammatory process. These measures will be separately considered, though used together.

428. In the first stages of inflammation, should the physician

be called, and recognize the disease as inflammation of the cervix, such general measures should be used as we adopt for inflammation of other parts of the system. Thus, the patient should be kept quiet, in the horizontal position, the sedatives given in the usual doses, with such other remedies as may be specially indicated. Those named under the head of congestion of the cervix may be thought of here, though we are not restricted to such as specially influence the uterus. The Macrotyls and Caulophyllum are admirable remedies in many cases, and associated with Aconite will frequently remove the unpleasant symptoms in the early stage. The torpid condition of the abdominal viscera or intestinal canal may be rectified by the use of the small dose of Podophylin and Hydrastis; nausea and abdominal pains by Nux; and abdominal tenderness by Dioscorea. Harsh remedies in the form of cathartics and other means are to be avoided; and even local applications over the hypogastrium are frequently harmful rather than of benefit, as also are injections in the early stage. The Apis may be referred to as especially a good remedy when there is burning and difficulty in passing urine; and the Rhus when there is the frontal headache.

Where the disease has continued for some time, affecting the deep tissues of the cervix and its cavity, producing a plentiful leucorrhæal discharge, and affecting the general health of the patient, other measures will have to be resorted to. Here, the disease is essentially chronic in its character, and the tissues have become habituated to the morbid action, which has no tendency to terminate naturally in resolution; in this stage of the disease, we generally find the dyspeptic symptoms already spoken of. Here, it will be necessary to employ such measures as will restore the general health of the patient, as well as to counteract the local disease. From the group of remedies that control the inflammatory process, select those best adapted to the case in hand, and add such uterine remedies as may be indicated. It may be that we will want some of the saline diuretics, the salts of Iodine or Bromine, remedies that influence the intestinal canal, special remedies for the skin, etc. Especial attention is to be given to the menstrual and reproductive function. Sometimes the use of Macrotyls, Pulsatilla and Viburnum, to give normal menstruation,

will be speedily followed by a cure of the inflammation. In other cases, remedies like the Hamamelis, that strengthen the pelvic circulation, will be demanded. The constipation of the bowels is best overcome by a drop of the tincture of Nux in the morning, with abdominal frictions—Quinine inunction being a good thing in many cases.

In order to quiet the sympathetic irritation of the stomach that frequently exists, it will be necessary to apply counter-irritation over the lower lumbar portion of the spine, and sometimes over the epigastric region; the irritating plaster is the best counter-irritant that can be used. When it is applied over the stomach, there is generally no necessity of continuing it until it produces free suppuration, a slight degree of irritation kept up by it, accomplishing all that is desired. It is very important in treating these cases, that the excretory organs should be stimulated to a full performance of their functions; thus the skin should be kept in a healthy condition by the use of baths, either warm or cold, and by brisk frictions, and the kidneys stimulated to a normal performance of their functions by the occasional use of diuretics. In addition to the use of general remedies referred to above, we may greatly assist in the removal of the local inflammatory process, by the use of internal remedies. For this purpose, we may use with much benefit the Caulophyllum, Helonias, Senecio, Actaea, and Trillium. These agents exercise a special influence on the uterus, removing congestion, subduing inflammation and increasing the tonicity of the uterine organs. They may be given either separately, or in combination with the remedies named above. The Iodide of Iron has likewise been used with considerable benefit; the solution is the best form in which it can be administered; the Off. Liquor Ferri Iodidi, dose from gtt. xx. to xxxx.

429. Among the local measures employed, *vaginal injections*, either of water only, or of water containing some medicinal substance in solution, are among the most valuable means of treatment in this disease. Special directions, however, will have to be given to the patient, or her nurse, in reference to the proper

mode of using them, or they will be found of little avail. In order to obtain the full benefit of vaginal injections in diseases of the uterus, it is necessary that they shall be brought in contact with the neck of the uterus, and be retained a sufficient length of time; in order to administer these injections properly, the patient should lie upon her back, with her hips elevated, so that the fluid may gravitate toward the cervix uteri; the female syringe used should be introduced to the cervix, and when withdrawn, the vulva should be compressed with a napkin, in order to retain the fluid in contact with the cervix for a sufficient length of time. If these directions are not given, the probability is, that the injections will be used in a standing or sitting position, the natural consequence of which would be that the fluid would immediately escape from the vagina as soon as ejected from the syringe; or the syringe might be only partially introduced, the injection not reaching the cervix at all; or if compression is not used over the vulva, the natural contractility of the vagina expels the injection before it has remained sufficiently long to prove effective.

430. The best syringe that can be used to give these injections, is the pump-syringe, fitting it to a vaginal tube about six inches in length. With this syringe any quantity of fluid required can be used for an injection, without withdrawing the syringe, as has to be done when the common small female syringes are used. In the place of this instrument, a large metal syringe, fitted with a vaginal tube will be found to answer a very good purpose. If the common female syringe is used, they should be obtained as long and as large as can be well used.

431. *Water*, either hot or cold, deserves the first place in the description of these injections, not only from its importance in cleansing the cervix and vagina from morbid secretions, but also for its therapeutic effect. Injections of water, either hot or cold, should be used in this disease as often as twice a day, whatever other local means may be resorted to, in order to remove the morbid secretions of the diseased parts, and keep the vagina in a clean and healthy condition. It will be recollected that in married women, the upper part of the vagina, or that inclosing the cervix, is somewhat dilated, and that, when healthy, it closes

on itself in its entire extent. As a necessary result of this structural condition, the muco-purulent matter secreted by the inflamed cervix, when it is not large in quantity, is retained around the cervix, where it tends to keep up and perpetuate the inflammation, and gives rise to ulceration. It will thus be seen, that much depends upon the use of water as a wash to cleanse the parts. In using water for this purpose, a sufficient quantity should be injected to accomplish this object. *Warm* water used as an injection, acts as an emollient, softening and relaxing the tissues, and subduing irritation; in some cases, it will be found to exert a better influence than the cold; this will be especially the case where the inflammation is acute, where it has extended to the vagina, or where the patient is very nervous or irritable. *Cold* water is a powerful tonic and astringent, and may be used very beneficially toward the subsidence of the inflammation, and it should always be continued for some time after the disease has been subdued, to prevent a relapse. When there is much irritation of the cervix and upper part of the vagina, it will be necessary to use emollient or narcotic injections; a decoction of marsh-mallow, or of slippery-elm bark will be found very useful, from their soothing effect upon the inflamed mucous surface. I have also used a decoction of the leaves of the stramonium, as an injection in these cases, with marked benefit.

In other cases, where there is no irritability present, or where it has been removed, other injections may be used to remove the inflammation. For this purpose, the injection recommended by Prof. T. V. Morrow may be used with much advantage.

B Pulvis, Macrotyls Racemosa,
" Geranium Maculatum, aa. 3ij.
Aqua Bulliens, Oct. iv.

Let it boil for half an hour, strain, and use from four to six ounces, as an injection, twice a day. This injection is astringent, and it likewise exerts a peculiar influence on the vaginal walls and cervix uteri, removing congestion and inflammation, and giving tone to the mucous membrane lining the vagina and

vaginal portion of the cervix. Another injection, that will be found very beneficial in these cases, is composed of

R *Hydrastis Canadensis*, $\frac{3}{2}$ ss.

Rhus Glabrum, $\frac{3}{2}$ ij.

Aqua Bulliens, Oct. ij.

Let it boil for fifteen or twenty minutes, strain, and use as an injection. A solution of Salicylic Acid and Borax, of Chlorate of Potash, Sulphate of Zinc, or sometimes of Hydrate of Chloral, may be used as a vaginal injection with benefit.

432. If there is a copious secretion of mucus, or muco-purulent matter, the canal of the cervix should be carefully examined in regard to its degree of dilatation, and the distance this extends up it, and if it is much affected by the disease, the tenacious mucus should be removed in the manner heretofore stated, in order to allow the injections to come in contact with all parts of the cavity.

433. By the judicious use of the remedies above-named, a majority of these cases may be radically cured; some few cases, however, after improving for a week or ten days, will then stop, no further benefit appearing to be derived from their use. In the most of these cases, the canal of the cervix will be found to be the part mostly involved, and the treatment will have to be directed to it. The quickest way to remove the diseased condition of the cervical cavity is, to apply to it, as far as dilated, by means of a camel-hair pencil, a strong solution of the Sesqui-Carbonate of Potassa, or Nitrate of Silver.

RESULTS OF INFLAMMATION OF THE CERVIX UTERI.

434. Inflammation of the cervix uteri gives rise (directly) to *hypertrophy*, erosions, *granular* elevations of different kinds, and to *ulceration*. It may, likewise, be a cause of, or greatly aggravate, *dysmenorrhea*, *amenorrhea*, *menorrhagia*, and *leucorrhea*. Its relation to these diseases will, however, be hereafter considered under their separate heads. Does inflammation ever give rise to *cancer*, *corroding ulcer of the os uteri*, or to *cauliflower*

excrecence? It has been thought, by many writers, that inflammation of the uterus is a frequent cause of cancer. This opinion, however, does not appear to be founded on the results of careful observations. As inflammation of the cervix uteri gives rise to the formation of a true and normal pus, and very frequently to ulceration, with its secretion of normal pus, I should consider that when it presented this character it was directly opposed to cancer formation. My reasons for this opinion are, that cancer is never accompanied by an exudation of normal pus, neither have I been able to learn that it ever has arisen as a consequence of any morbid action producing this exudation. The formation of normal pus, in every case, appears to be diametrically opposed to the existence of any malignant growth. This is well shown in the treatment of cancer, after the diseased mass is removed, either by the knife or caustic, free suppuration is indispensable to prevent its reproduction, and where this normal pus secretion is maintained, it rarely, if ever, recurs. If, however, a low degree of inflammation exists, without exudation, or, if the exudation is thin, variously discolored, presenting none of the characteristics of the normal bland pus, we then have the very condition of the parts necessary to the formation of malignant growths. In one case that I had the opportunity to observe, the rise and progress of carcinoma of the cervix, this low degree of inflammation was present before the development of the cancerous growth, and I have no doubt that it was the proximate cause. These observations will also apply equally well to those *cancroid growths, cauliflower excrescence, and corroding ulcer.*

435. Dr. Bennet formerly entertained the opinion that inflammation was a frequent cause of cancer of the uterus; his views, however, have since been changed. In the last edition of his work, he says: "Clinical experience has led me to modify the opinion I formerly entertained, in common with the rest of the profession, respecting the frequency of cancerous degeneration of chronic inflammatory tumors. During the last ten or twelve years, I have followed the progress of many cases of uterine inflammation, and have not seen a single instance of inflammatory disease thus degenerate. In some instances, I have been told in

consultation, that the disease respecting which my opinion was required, although then evidently cancerous, had at first been merely inflammatory. In these cases, however, the diagnosis of my informants could not be relied upon, and the antecedents of the patient were also completely at variance with their view of the evolution of the morbid phenomena. On the other hand, all the cases of cancerous disease that I have witnessed during the before-mentioned period, have been evidently such from the time they first came under my observation."

HYPERTROPHY OF THE CERVIX UTERI.

436. Hypertrophy of the uterine tissue is, in a great majority of cases, confined to the cervix, though sometimes it extends to the body of the uterus. Inflammation may be considered the cause of hypertrophy in nearly every instance, the inflammatory products not being reabsorbed, but becoming organized, or the inflammation being of a lower kind, the circulation of the blood increased, the textural nutrition of the organ becomes morbidly exaggerated. Hypertrophy of the cervix uteri may, or may not be accompanied with induration; one of the first effects of inflammation is to produce congestion and enlargement of the cervix; the enlargement may continue for years, the cervix being soft and elastic. This, however, is not very common, induration generally accompanying hypertrophy.

437. Hypertrophy of the cervix may arise either before or after ulceration. Dr. Bennet thinks it to be more frequently the sequela, than the cause of ulceration: he says, "I have very often been able to follow the extension of the inflammation accompanying ulcerative disease to the deeper-seated tissues, and to watch the gradual manifestation, under its influence, of deep-seated induration. Thus, I have frequently seen cases in which a slight ulceration was at first the only lesion, and in which the general induration, which subsequently made its appearance, gradually became more and more marked as the ulceration increased in extent. I am also continually meeting with ulceration confined to one lip, accompanied by induration, and hypertrophy of that lip only. Although I thus consider induration and hypertrophy of

the cervix generally to be the result of extension of superficial inflammation to the central tissues, to be the sequela and not the cause of ulceration, the reverse may take place. Induration and enlargement of the cervix may remain as a result of general metritis, and by the irritation which it produces give rise to inflammation and ulceration of the mucous surface. Whatever may have occasioned the inflammatory induration, if it persists, it certainly becomes an important cause of local disease, continually reproducing the ulceration, unless means be taken to remove it as well as the more superficial disease. This it does in two ways; by keeping up a chronic state of inflammation of the organ, in which the mucous surface participates, and by the friction of the hypertrophied and generally prolapsed cervix against the parieties of the vagina occasions."

438. *Symptoms.*—The symptoms accompanying hypertrophy of the cervix are the same as those of inflammation. There is, however, a greater sense of weight and dragging in the pelvic cavity, and a sensation of pruritus or rawness. On making an examination, the cervix will be found more or less displaced, and increased in size; this increase in the size of the organ may be confined to one lip, or involve the entire cervix. If there have been previous lacerations in labor, the indurated cervix may be divided into lobes, as is seen in the plate. If it is likewise indurated, it will be dense to the touch, though not presenting the rough feeling that distinguishes malignant disease; if it is not indurated, it will be found soft and elastic. In all cases the external orifice will be found enlarged, but instead of the circular or nearly circular orifice, it will be transverse, presenting well-defined lips. The cervix will also be more red, smooth, and moist, than natural.

439. *Treatment.*—The first point in the treatment of hypertrophy of the cervix, is to subdue the existing local inflammation. For this purpose the means heretofore recommended should be employed. If the patient be debilitated, the same tonic course should be pursued to build up the health of the patient, keeping the secretions and excretions in their normal healthy condition. These means may have to be employed for a month or two before

the low degree of inflammation accompanying hypertrophy is entirely subdued. If after this the hypertrophy still continues, more energetic means will be required. The use of *Macrotys* with *Pulsatilla* in small doses, will sometimes give speedy relief, though to effect a cure it must be continued for a number of months—at least to the extent of regulating the menstrual flow. When œdema is a marked symptom, especially when associated with menorrhagia, the *Apocynum* will be indicated. Associated with disease of the mammary glands, or lymphatic enlargement, I would advise *Phytolacca*; and with disease of the thyroid gland, the *Iris*. The *Hamamelis* is an excellent remedy in those cases marked by venous fullness, and a lax condition of the tissues closing the outlet of the pelvis. It may be given in doses of from ten to thirty drops four times a day, and may also be used as a local application to the hypogastrium, and as an injection. Some of the remedies known as uterine tonics are also available here, as the *Senecio*, *Helonias*, etc. But whatever is used should be selected with care, and it may be any remedy of the *materia medica*, if there is a specific indication for it. I have had quite as much benefit from *Bryonia*, *Rhus*, *Nitric Acid*, *Baptisia*, and remedies of this class, as those that have direct action on the uterus.

440. Among the local applications that have been used to overcome hypertrophy of the uterus, I might mention the Sesqui-Carbonate of Potassa, Nitrate of Silver, Potassa Cum. Cale., and the Potassa Fusa. In many cases of hypertrophy, with but a slight degree of induration, the application of the Sesqui-Carbonate of Potassa to the enlarged cervix, in addition to the last injection recommended in the treatment of inflammation of the cervix, will be found to quickly remove the enlargement. In using this agent, a saturated solution should be made, and applied to the entire cervix, by means of a camel's-hair pencil; it should also be applied to the cervical cavity as far as it is open. The application of this caustic produces but little pain, and is followed by an increased secretion from the parts, which, however, ceases in from one to two days, when it should be reapplied. The application of this caustic should be followed in about fifteen minutes with injections of cold water, made slightly acidulous with vinegar. The Nitrate of Silver is also recommended in

these cases, applying the stick nitrate by means of a caustic-holder, to the surface of the cervix; it produces a white film, or superficial eschar, which falls off in the course of two or three days. Its application is rarely followed by much pain, and it may be reëpplied when the eschar falls off; of the two agents, I would prefer the Potassa.

441. The *potassa cum. calce.* and the *potassa fusa* are employed in these cases, where the enlargement of the cervix is accompanied with induration, and in which other measures have been found unavailing. The *potassa cum. calce.* is preferred by many practitioners to the *potassa fusa*, from the great deliquescence of the latter agent, and its liability to run down the sides of the speculum and form an eschar in the bottom of the vagina. Dr. Bennet uses the *potassa cum. calce.* cast into sticks like the nitrate of silver; it is composed of two parts of hydrated potassa and one of lime; this he has found as efficient as the *potassa fusa*. Dr. Simpson uses the latter agent; he says, "Having found inflammatory enlargement and induration of the tissues of the cervix very frequent in practice, and existing, in fact, in most cases of very chronic and aggravated leucorrhea, and in some cases having mistaken it for the induration and ulceration of carcinoma, etc., he has employed in these cases the nitrate of silver, *potassa cum. calce.*, and nitric acid. Latterly he had abandoned these and other escharotics, and now always uses the common *potassa fusa*. He has found it far more manageable, speedy, and certain, than any other method. He uses it, of course, through the speculum, applying a stick of it freely, with a proper caustic-holder, to the ulcerated and indurated tissues. It required to be rubbed or held *strongly* for a time against the part which was to be destroyed. In general, a piece three-quarters of an inch or an inch long was melted down. If the induration is extensive, and the whole can not be removed at once, increased action and absorption are set up in what remains, and the parts adjacent become softened and diminished in size. He has never seen pelvic cellulitis or any other bad result follow."

I have introduced this quotation from Dr. Simpson's work, not only for the purpose of showing the applicability of this method

of treatment, and the extent to which it may be used without producing any bad effects, but also to caution the reader against the destruction of tissue, which appears to be the chief motive Dr. Simpson has in view. The object in using these agents is not to destroy the enlargement, or, in other words, melt the enlarged cervix down to a natural size; but to modify the action of the part, and cause an increased absorption. After the cervix has been cauterized, nature sets up eliminatory inflammation, in order to throw off the eschar. This inflammation extends more or less to the hypertrophied tissues, according to the size of the eschar, causing an increased absorption as well as an increased elimination from the hypertrophied part, by the copious purulent discharge which usually follows for two or three days, and which continues in smaller quantities until cicatrization of the ulcer left by the eschar takes place. Under the influence of this very simple process, the effects of which persist during two or three weeks from the date of cauterization, any amount of hypertrophy of the uterine neck may be gradually and safely removed, and that without much suffering to the patient.

442. Of late years I have employed local means much less frequently than in the olden time, having found that internal remedies carefully selected, would accomplish the object quicker. And now when I use them, I frequently make a different selection. If there is ulceration or erosion of the canal or the cervix, I like the free application of nitric acid with a pine pencil. When the surface is spongy, and secretes a muco-pus, which has an unpleasant odor, the permanganate of potash may sometimes be used with advantage, the strength varying from grs. x. to ʒj., to water, ʒj., according to the condition of the case. Carbolic acid and glycerine may also be thought of as a possible local remedy. In some cases a prescription of—℞ Solution of persulphate of iron, tinct. opium, aa., applied with a camel's hair pencil, will aid in lessening the size of the cervix. The extract of *Pinus canadensis*, and other of the vegetable astringents, may also be used for the same purpose.

When the body of the uterus is also enlarged, the tissues being full, doughy, and evidently atonic—very much like the enlarged spleen, called “ague cake”—I have used the ointment of Uvedalia

with excellent results. It should be thoroughly rubbed in over the hypogastrium, and then toasted in by a warm iron passed over the surface, which is covered with flannel. Advantage may also be found by rubbing the perineal tissues with it. Quinine injection must not be forgotten as a possible means in some unpleasant cases, where the patient has suffered from chronicague. Even the rubbings and kneadings of the "Swedish movement cure" will be found of advantage. And the use of electricity, if *skillfully applied*, may be made to take the place of other treatment.

443. It is well to call attention to the necessity of proper dress and means of support for the pelvic organs. It will not do for a woman suffering from uterine hypertrophy to wear her clothing suspended from the waist. All pressure upon the abdomen must be removed, and the skirts and clothing supported from the shoulders. Corsets are made which come down over the abdomen and hips, that serve the purpose, but in the majority of cases it is better to suspend every thing from the shoulders. Using the long abdominal corset, straps may be carried between the thighs, and a perineal pad for support worn. Or a nicely fitted pelvic bandage with the same straps for perineal support, will frequently be of much service. This apparatus is figured on page 349.

EROSION OF THE CERVIX.

444. By erosion of the cervix uteri, we understand an abrasion of the mucous membrane covering it, of greater or less extent. It forms the first stage of ulceration, and though it may extend that far, yet, it very frequently remains for some months a simple abrasion of the mucous membrane. Erosion of the cervix is invariably accompanied by inflammation, being a result of that disease. Dr. Bennet considers all breaches of continuity in the mucous membrane to be ulceration. He remarks: "That when an abrasion or excoriation only is present, the cervix is generally of a vivid red, and the granulations are often so minute, that it is difficult at first, to ascertain whether the membrane is abraded or merely congested, or perceive the limits of the ulceration, when once it has been ascertained to exist. The doubt, however, may be solved, by lightly touching the suspected surface with Nitrate of Silver. The abrasion immediately assumes a much whiter hue,

than the region which is merely congested, and its margin becomes well defined and evident. An abraded, excoriated condition of the mucous surface is generally the form under which ulceration presents itself in the cavity of the cervix; granulations of any size being seldom met with in this region. In virgins also, ulceration often presents this character, especially when it is limited to the cavity of the os."

These erosions have been minutely investigated by Dr. Tyle Smith, with the microscope; he says: "The epithelium of the external portion of the os and cervix uteri, and of the upper portion of the vagina, may be partly or entirely removed; or there may be morbid patches in which the epithelium is here and there wanting. When in analogous states, the epithelium has been removed in the living subjects by diseased conditions, the mucous membrane is of an intensely red color, from the presence of the naked villi, with their vascular loops, and it conveys an impression of roughness and denudation upon examination by the speculum. To the touch, the abraded surface feels erectile and velvety; a term which has been very commonly applied to what has been considered ulceration of the cervix and os uteri. The villi do, indeed, in this condition, stand out somewhat like the pile of velvet, and in some cases they themselves are considerably enlarged. In other cases, there is not merely the loss of the dense epithelium, but the villi, both of the external surface of the os uteri, and of the mucous surface within the labia uteri are destroyed in patches. In that condition of the os uteri, which, on examination after death, would be pronounced to be undoubted superficial ulceration, the state which generally obtains, is partial or entire loss of the epithelial layer in circumscribed patches, and here and there the loss or partial destruction of the villi. This gives an eaten, corroded appearance to the mucous surface; such a condition of the os may be limited in extent, or it may spread over the whole of the os and the external cervix, and pass within the labia uteri. Sometimes small circumscribed ulcers are seen, in which the denuded or partially denuded villi are found surrounding the edge of the small ulcer; the area of the ulcer itself being

bare of villi, or the ragged debris of villi, and their vascular loops appearing at the bottom of the ulcer."

445. With this erosion there is always more or less induration, the tissues about it being slightly thickened, especially at the edges; still, the edges are not raised or everted, either in simple erosion, or ulceration following inflammation. The discharge from these erosions may be thin and sanious, but it is much more frequently purulent.

446. *Symptoms.*—When we consider that erosion of the cervix is but a result of inflammation appearing during its progress, we would not expect to find any other symptoms present than those of inflammation, this being the disease, the erosion the result.

447. *Treatment.*—If, after using the treatment recommended for inflammation, the erosion does not heal, or if, at any time, it should appear to be progressing toward ulceration, it should be freely cauterized with the nitrate of silver. This cauterization should be used in conjunction with the injections heretofore recommended. There are but few cases which will not yield to the use of the last injection named in the treatment of inflammation.

ELEVATIONS THE RESULT OF INFLAMMATION.

448. Elevations of different kinds may arise on the surface of the cervix uteri, as a result of inflammation. They may arise either from the surface of an erosion, from an ulcer, or from the mucous membrane covering the cervix. So many varieties of these elevations have been noticed, that a full description is impossible, and if given, would be of but little benefit to the reader without it was accompanied by plates. These granulations, however, must not be considered the disease, the inflammation accompanying them being the principal affection, and the one that demands the attention of the physician.

449. Fig. 18. In this case there was sub-acute inflammation of the cervix, with its symptoms. On examination, the uterus was found low down in the pelvis, the cervix uteri was soft, and larger than usual, and presented, to the finger, some unevennesses, which

were round and soft, but not tender on pressure. On bringing the cervix into view with the speculum, these small softish bodies would be seen more distinctly; they were of a deep red color, of the volume of small peas, and without pedicles. It was supposed that they were varices.

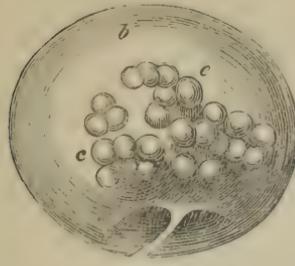


FIG. 18.

450. Fig. 19. In this case there was also inflammation of the cervix; the catamenia were abundant and irregular, accompanied with leucorrhœa and considerable tumefaction of the uterus. The surface of the cervix uteri was livid, and beset with milliary vesicles; the os uteri bled on pressure, and in the act of defecation.



FIG. 19.

451. Fig. 20. Case of inflammation of the cervix uteri, presenting the more severe symptoms of the affection. The catamenia were frequent and very abundant, the pains very acute. On examination, the cervix uteri was found resting on the perineum; the cervix, of a brownish-red color, was not much larger than when in its natural state; it was, however, soft, and presented on its anterior labium, two small, white, and solid tumors, of the size of a small pea; this part of the uterus was the seat of severe pain.

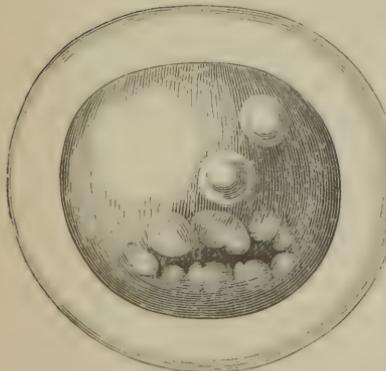


FIG. 20.

452. Fig. 21. Inflammation of the cervix uteri, with hypertrophy. It will be observed that the os is large and transverse, dividing the cervix into two lips

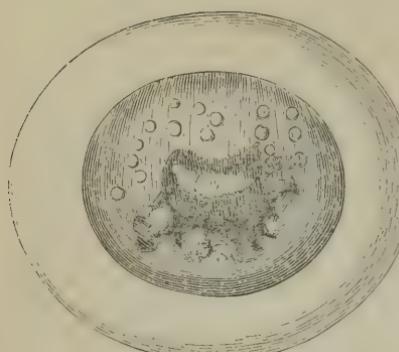


FIG. 21.

superabundant growth. This may sometimes be done by the use of astringents, as the application of Pulverized Alum to the cervix, or by the use of the Sesqui-Carbonate of Potassa, or Nitrate of Silver. If these should fail, we would have to resort to the use of the Potassa Cum. Calce., observing the same precautions that have been heretofore mentioned.

ULCERATION OF THE CERVIX UTERI.

454. We have already seen that inflammation of the cervix uteri may exist even for years, without producing ulceration; this, however, is the exception, and not the rule, inflammation of the cervix, in a majority of cases, producing ulceration or erosion. Indeed, the mucous membrane covering the cervix, and lining its cavity, especially that portion near the os, appears to be peculiarly liable to ulceration as the result of inflammation.

455. Ulceration of the cervix generally commences near the os, and from this point it may extend to the cavity of the cervix, involving more or less of it, in some rare cases extending up it as far as the os internum, or it may extend outward, involving a greater or less portion of the mucous membrane covering the cervix.

456. This ulceration varies in character, from the slight erosion already described, and which can with difficulty be distinguished, to the deep, perfectly-formed ulcer. The depth of these ulcers varies from one to six lines, though they never present well-

On the anterior lip there is a well-defined ulcer, with uneven edges, extending into the cavity of the cervix. The surface of the cervix is seen covered with granular elevations.

453. *Treatment.*—In addition to the treatment recommended for the inflammation, it will be necessary in these cases to resort to the caustic applications to destroy the

defined edges to the touch, like ulcers in other situations. The edges of the ulcer are never indurated, raised or everted, and by this single feature they may be distinguished from syphilitic or serofulvous ulceration. In general but one ulcer is found upon the cervix, and this near the os; it may, and frequently does extend to the cavity of the cervix, and outwardly involving more or less of the surface of the cervix; sometimes, however, several small ulcerations may be observed around the os, in addition to the large one; those are supposed to be formed by ulcerated mucous follicles. The bottom of the ulcer, in most instances, is filled with healthy granulations, and covered more or less with purulent matter. These granulations, according to Dr. Bennet, may be firm, of a vivid hue, scarcely bleeding upon pressure; or they may be large, fungous, livid, and bleeding profusely at the slightest touch. These fungous ulcerations are generally connected with torpor of the local circulation. When they are present, the congestion of the cervix and vagina is very great, of a livid or venous character, and the non-ulcerated cervix may present dilated varicose veins. It is the presence of these varicose veins that has led French writers to give to ulcerations, in which they occur, the name of varicose ulcerations. In pregnant women, after the first few months, ulceration of the cervix generally assumes this fungous form. Sometimes the granulations of a purely inflammatory but luxuriant sore, will rise above the level of the surrounding parts, and even form small fleshy masses, which may be partly brought away by the finger, or which separate spontaneously. Ulcerations of this description bleed profusely whenever they are interfered with; sometimes to such an extent, that on bringing them into view with the speculum, the blood partly fills the instrument as often as it is wiped away.

457. The cavity of the cervix is always more or less affected by ulceration of the cervix; the ulceration, as we have already seen in a great majority of cases, commences near the os: the lips of the os swelling, enlarging, and expanding, open the external orifice. The orifice is sometimes so enlarged that the first joint of one or two fingers may be introduced into the cavity; in slighter cases, the finger merely passes between its

patulous lips. Very frequently the ulceration extends to the cavity of the cervix, sometimes involving its entire dilated portion. It, however, rarely if ever extends to the cavity of the uterus, the natural constriction at the os internum appearing to prove an effectual barrier to its further progress. Again, in some instances, the cavity of the cervix may be dilated, and ulceration be present in it; but the external orifice will be nearly closed. In these cases, if the os be not opened, and the canal of the cervix examined, the disease may remain undiscovered for months, the treatment used to relieve the difficulty proving ineffectual. To dilate the os and examine the cavity of the cervix, take the Ricord speculum, remove its loose blades, and introduce it so that its handles will project laterally toward the thigh of the patient; then, when its blades are opened, it will separate the lips of the os.

458. Ulceration of the cervix uteri, in nearly every instance, aggravates the symptoms of inflammation. Thus, the lumbosacral, ovarian, and hypogastric pains will be increased in intensity, the constitution will suffer more, and, therefore, the constitutional symptoms will be increased. Sometimes, though rarely, the patient will have no discharge from the vagina, but, in the majority of instances, there will be a continuous white discharge. Mucus will form a greater or less proportion of this discharge, the irritation of the mucous follicles of the cervix and upper portion of the vagina, causing a greatly increased secretion, and the same irritation, extending to the canal of the cervix, produces an increased secretion of the peculiar, thick, ropy, transparent white of egg mucus, from that canal. This mucus is mixed with a larger or smaller quantity of purulent matter, thrown off by the ulcer. When the discharge is purely purulent, it is generally thick, yellow, and seldom very abundant. As we have already seen, when the granulations assume a fungous form, the vaginal secretions may be more or less mixed with blood; this occurs especially after any exertion or severe exercise, or after coition, though it may take place at intervals, without any appreciable cause.

459. *Treatment.*—The general treatment in ulceration of the

cervix should be the same as that recommended in inflammation. In fact, the general and local treatment there laid down will be sufficient to overcome the mild cases of ulceration. If, however, the ulceration does not heal under the use of the local applications recommended, and the ulcer presents a healthy appearance, we might use, in many cases, the following injection, with much benefit :

R Hydrastis Canadensis, $\frac{3}{4}$ ss.
Statice Limonum, $\frac{3}{4}$ j
Chlorate of Potassa, $\frac{3}{4}$ ss.
Aqua Bulliens, Oct. j.

Let it boil for fifteen or twenty minutes, strain when cold, and use a common-sized female syringe full twice a day. This should be followed, in about fifteen minutes, by free injections of cold water. If it produces too much irritation, it will be better to use it but once a day, and make the water used after it slightly acidulous with vinegar.

In other cases, it will be better to apply the Sesqui-Carbonate of Potassa to the ulcer. The way that I use the Potassa is to make a saturated solution of it, and dip a lock of raw cotton in it, of sufficient size to cover the entire extent of the ulcer, sprinkling on the cotton as much of the dry Potassa as will adhere. This is then introduced through the speculum, and applied to the ulcerated cervix; it may be surrounded with the raw cotton, to prevent its affecting the vaginal walls; a string may also be fastened to it, so that it may be withdrawn by the patient. In from half an hour to an hour this may be withdrawn, and the injections of water and vinegar used after it. It should be repeated at intervals of two, three, or four days, as the case seems to require, until cicatrization is complete. In all the cases that have come under my notice, I have used this agent with entire success. It promotes healthy granulations from the surface of the ulcer, and if the granulations be too large or irritable, it breaks them down and subdues the irritability. Probably all who have used this agent have noticed its peculiar effects on the living tissues; while not so strong as to endanger healthy parts, even to

break down healthy granulations in a wound or ulcer, yet, it is almost invariably effectual in removing fungous or callous growths, and stimulating healthy suppuration or granulation. It not only produces a healthy condition of the ulcer, but it likewise rapidly reduces the induration and hypertrophy accompanying it. I recommend this agent thus strongly, because I know from experience, that its action will be found much more beneficial than the nitrate of silver, so commonly resorted to in this disease.

460. If the ulceration extends to the cavity of the cervix, the caustic should be applied to it in the same manner already spoken of. Take a lock of cotton of sufficient size, roll it into a conical form, saturate it with the solution, and introduce into the cavity of the cervix. The application of the potassa to the cavity of the cervix, will, in some instances, produce severe pain, but this always ceases in from ten to thirty minutes.

461. The *nitrate of silver* is the agent most commonly employed in these cases; it is applied through a speculum, by means of a proper caustic-holder, or in solution, with a camel's-hair pencil. It is freely applied to the surface of the ulcer, and to its edges; if thus applied, it forms a white film or eschar, about the thickness of a piece of drawing-paper; this is thrown off about the third day. The surface of the ulcer after the eschar is thrown off, is generally found red, irritable and bleeding; in another day or two, this redness and tendency to bleed has disappeared, and by the seventh or eighth day, all the benefit to be derived from the cauterization is apparent. After this time, if the caustic be not reëapplied, the ulcer soon assumes the appearance it had before; its irritability returns, as well as the sympathetic reaction on the general system. This caustic should be reëapplied as often as every five, six or seven days, until the ulcer has healed.

462. In those cases that resist the action of the agents above-named, it will be necessary to resort to the application of the stronger caustics, the *potassa cum. calce.*, and the *potassa fusa*. Whether these agents would be required, if the sesqui-carbonate of potassa was used in the manner already described, I am unable to say, never having seen a case that resisted its use. The stronger caustics are used to modify the vitality of the parts.

excite a healthy inflammation and suppuration, and thus promote the formation of healthy granulations and cicatrization. The mode of using these agents, has been already described in the treatment of hypertrophy. The same care should be employed when using them for ulceration. If these caustics are used merely to modify the vitality of the part, they should not be kept in contact with the part but a few seconds; if, however, the intention is to produce a slough, they must be kept in contact longer. According to Dr. Bennet, the eschar produced by potassa fusa, does not fall off at any given time, but melts away, as it were, revealing a healthy, granulating surface, from which it has gradually been thrown off. This gradual disintegration of the eschar is accomplished in from five to ten days, according to the depth to which the tissues have been destroyed. At about the third day, if the cauterization has been deep, the surrounding parts will be found the seat of considerable inflammatory reaction, and the cervix and the upper portion of the vagina will generally be found considerably congested and inflamed. The elimination of the eschar may be attended with hemorrhage, though this may be readily arrested with cold astringent vaginal injections. In the course of from seven to fourteen days, the cervix and adjacent parts return to the state in which they were before the application of the caustic. The ulcer will generally be found larger, the granulations are more florid and more developed, and appear endowed with more vitality. For ten or fourteen days that follow, there is little or no change in the ulcerated surface, which continues to secrete healthy pus; but about the twenty-fifth day, from the date of the cauterization, a decided progression toward cicatrization commences. This tendency to heal in the ulceration, continues to be very marked, from about the twenty-fifth to the fortieth day, when it ceases. Very frequently, the ulceration heals before the fortieth day; but if it does not, the influence of the strong potassa cauterization being exhausted, it must either be repeated, or the treatment be carried on with the milder caustics, if it is thought that they alone will suffice. Severe cauterization should never be resorted to, within less than twelve days of the menstrual epoch, which it often slightly accelerates.

463. In using either the nitrate of silver, the potassa cum calce., or the potassa fusa, for ulceration of the cavity of the cervix, it would always be better to apply them in solution, with a camel's-hair pencil, in consequence of the danger of breaking the stick and leaving a portion of it in the cervix. The application of the stronger caustics to the cavity of the cervix should also be very light; the object not being to produce a slough, or to excite severe inflammation, but merely to modify the action of the ulcerated surface.

CORRODING ULCER OF THE UTERUS.

464. This disease, fortunately, is of very rare occurrence; it rarely attacks females under forty years of age, although it has been met with in persons younger than this. Dr. Ashwell defines it to be "an ulcer of granular shape, commencing in the glandular structure of the cervix, rarely of large size, but destroying life by a corroding or eating away of the uterus, even to its fundus, and occasionally implicating the bladder, vagina, and rectum. There is less pain than in cancer of the womb, from which it also differs in there being no indurated deposit, no immobility, and no fungoid growths in the seat of the ulceration. It is malignant, and except in the commencement, entirely incurable."

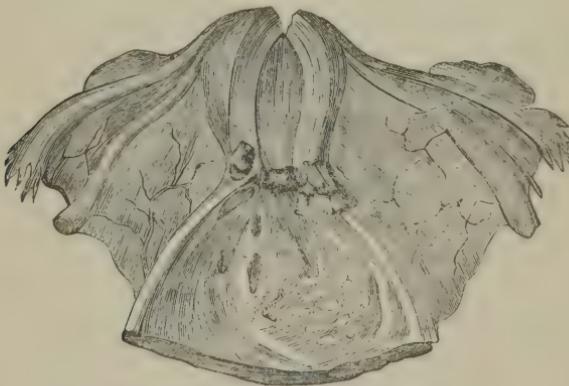


FIG. 22.—CORRODING ULCER OF THE UTERUS.

465. Prof. Rokitansky thinks that it may be compared to the phagedenic (cancerous) sore of the skin; without having a morbid

growth for its base, it gradually destroys the cervix, and even the greater part of the uterus, and may extend to the rectum and the bladder. It is an irregular, sinuous, jagged ulcer, the tissues at the margin and the base of which are thickened or hypertrophied, in consequence of a sluggish inflammatory process. The base presents a greenish and brownish-green discoloration, with a slight glutinous and purulent, or a more copious and watery secretion. There are no granulations, but we find an exudation, and according to the immediate reäction, the tissues are converted into the above-mentioned products of the ulcerating surface."

466. *Symptoms.*—This disease may be preceded by pains in the pelvis, a leucorrhæal discharge, and other symptoms of uterine disease; in other cases reported, none of these symptoms were manifested until the ulceration was fully developed. In some cases, attention is directed to the disease by a profuse hemorrhage recurring at irregular intervals, and which is often mistaken for a recurrence of the catamenia. When the ulceration is fully developed, a profuse discharge takes place from the vagina of a thin, watery, and ichorous fluid, which is generally of an offensive odor. The color of this discharge varies from a light straw color, to a dark brown; sometimes, though not often, it becomes purulent.

467. Dr. Churchill says, "soon after this disease has developed, we find the patient complaining of weakness, weight, and pain in the back; the latter sometimes extending to the loins, or round the lower part of the abdomen. The character of pain is by no means uniform; sometimes it is described as lacerating, resembling a knife running into the back; at others, burning like a hot iron. In a few of the cases that I have seen, no pain whatever was experienced from the commencement. The great weakness of the back, however, was present in all. Of course, so grave an attack can not occur without severely affecting the constitution. The patient becomes emaciated; the appetite diminishes; occasional sickness of the stomach; the bowels are irregular; the pulse is quick and small, the skin becomes dry and sallow, and a low fever sets in. From this time the disease advances with variable rapidity; in some cases it makes rapid progress; in others it

may continue for years without extinguishing life. As the disease continues, the discharge is augmented, the fever increases, and the patient loses all her flesh; the features are sharpened and the eyes sunken; the skin dry, or perhaps moist and flabby; the appetite ceases; dyspepsia is constantly present; the bowels are constipated, and their evacuation causes severe pain. The distress of the patient is often increased by excoriation of the vulva, caused by the acrid discharge. Ultimately, the patient sinks from exhaustion, or is carried off by peritonitis, from the extension of ulceration to that cavity, or by hemorrhage. The latter termination is, however, very rare."

468. *Diagnosis.*—There is no disease with which this can be confounded, if we except cancer in its ulcerative stage. These two diseases may be distinguished by the fact, that in corroding ulcer there is no increase in the size of the cervix, but the reverse, the cervix becoming smaller as the disease advances, from loss of tissue; this ulceration does not arise from an indurated base like cancer, and there is never any fungous growth in its cavity; in this disease, likewise, we do not find any adhesions or deposits between the uterus and adjacent parts, but it retains its natural mobility.

469. *Treatment.*—In this disease, we have a malady entirely local, and not like cancer of the uterus, affecting adjacent parts by the deposition of cancerous material, nor affecting the adjacent lymphatic glands, nor the system. It is true, the system is affected sympathetically, and by loss of fluids, yet there is no specific infection, like there ~~is~~ in carcinoma. From these facts, the disease should be considered more amenable to treatment than cancer. Still, after it has extended beyond the cervix, the treatment will have to be merely palliative. Severe cauterization is the only treatment that has ever been found to give permanent relief. Dr. Churchill states that he has used the nitric acid, chloride of zinc, caustic iodine, etc., in several cases, and though it was impossible to get the ulcer to heal, yet its progress could be arrested, the hemorrhage stopped, the pain relieved, and the discharge moderated. In one case, he supposed that life was prolonged a long time in consequence of their application.

470. As we know that the potassa fusa exerts a much more favorable influence in modifying the vitality of the parts, and that under its effects cicatrization progresses much more favorably than under the use of other caustics, I think that this agent should be preferred to any other. If the disease is still confined to the cervix, the ulcer should be freely cauterized with the stick potassa, using the same precautions heretofore spoken of when describing this agent. After the separation of the slough, the ulcer should be closely watched, and the stimulation kept up by the occasional application of the sesqui-carbonate of potassa. Injections of cold water would also be useful, to remove the discharges and prevent irritation of the vagina and vulva. The strong potassa cauterization should be repeated as soon as the effect of the first cauterization has passed off.

471. With this local treatment, such general measures should be employed, as would keep up the strength of the patient, and keep the secretions and excretions in their normal condition. If there be much pain with the disease, narcotics will have to be used to give the patient present relief. It would be better to commence with those which do not constipate the bowels, as the hyoscyamus, Chloral, Cannabis Indica, etc. These, however, in time, will have to give place to some of the preparations of opium.

In those case in which the ulceration has extended to the body of the uterus, to the rectum or bladder, nothing can be done for the patient but to palliate the symptoms, and thus smooth her pathway to the grave. The narcotics already mentioned may be given to allay the pain. The fetor of the discharge, as well as its ichorous properties, may be modified by the use of Carbolic Acid and Glycerine, of that strength which gives most relief.

CAULIFLOWER EXCRESCEENCE.

472. This disease, like the one last described, is not of frequent occurrence; it may be met with in females of all ages, whether married or unmarried, and without regard to constitutional peculiarities, habits or residence. Dr. Ashwell defines this to be "a morbid growth of the os uteri, consisting of minute ramifications of arteries, connected by a flocculent tissue, and covered

with a secreting membrane. Its surface has somewhat of the granulated feel of the broccoli; it bleeds on slight handling, and almost constantly pours forth a watery discharge. It varies in size, is nearly painless, and proves its malignancy by returning after removal, either by the knife, ligature, or caustic." Mr. Paget considers the true cauliflower excrescence to be a variety of the epithelial cancer; he says only a part, however, of the cases to which this name has been ascribed, have been epithelial cancers; of the rest, some were medullary cancers, and some, perhaps, simple non-cancerous, healthy, warty, or papillary growths.

473. According to Virchow, this begins as a simple papillary tumor, and at a later period passes into canceroid (epithelial cancer). At first one sees only on the surface papillary or villous growths, which consist of very thick layers of peripheral, flat and interior cylindrical epithelial cells, and a very fine interior cylinder formed of an extremely little connective tissue with large vessels. The outer layer contains cells of all sizes and stages of development; some of them forming great parent-structures with endogenous corpuscles. The vessels are, for the most part, colossal, very thin walled capillaries, which form either simple loops at the apices of the villi, between the epithelial layers, or toward the surface loops in constantly increasing number, or lastly present a reticulate branching. At the beginning of the disease, the villi are simple and close-pressed, so that the surface appears only granulated; it becomes cauliflower-like by the branching of the papillæ, which at last grow out to fringes an inch long, and may present the appearance of a hydatid mole. After the process has existed for some time on the surface, the canceroid alveoli begin to form deep between the layers of the muscular and the connective tissue of the organ.

474. Of a specimen of the cauliflower excrescence removed by excision of the cervix, Dr. Simpson says:

"The excrescence, after its removal, was found to measure two inches and three-quarters at its broadest part, and two inches and a quarter at its greatest depth. The thickness of it, where it implicated the posterior lip of the os uteri, was one and three-

eighths of an inch, but on either side it stretched forward and involved the angle between the anterior and posterior lips; thus rendering this admeasurement greater in its lateral parts. The anterior lip of the os uteri, which was fully removed as high as the reflection of the vagina, seemed sound except at the above angles. The posterior surface of the posterior lip was densely and completely covered by the excrescence up to the reflection upon the vagina. In exercising the diseased part, I removed it so high as to bring away all around, a small portion of the reflection itself of the mucous membrane of the vagina. The surface of this portion of membrane, as thus removed in attachment to the upper edge of the excrescence, appeared quite healthy on careful examination of the excised mass. The surface of the tumor presented a well-marked small granulated appearance, with deeper fissures crossing it, and giving it an irregular and lobulated appearance. The sides of it were considerably and deeply lacerated in various places by the teeth of the vulsellum

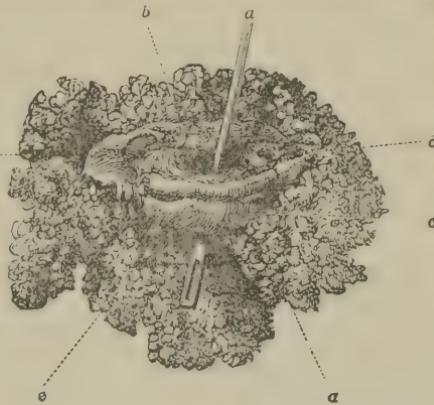


FIG. 23.—CAULIFLOWER EXCRESSENCE OF OS UTERI.

aa, Probe passed through the Cavity of the Os and Cervix Uteri; b, Anterior Lip of the Uterus; c, Posterior Lip; dd, Line of Incision by which the Cervix Uteri was removed; e, Rough Surface of the Tumor attached to the Posterior Lip.



FIG. 24.

aa, Under surface of the Tumor; bb, Portions lacerated by the Vulsellum.

On rubbing down any small part of the recent tumor between the finger and thumb, a kind of vascular or cellular frame-work was all that was left behind. The mass, before dividing it, was steeped in a strong alcoholic solution of Corrosive Sublimate, in order to insure its preservation. On making a section of the tumor after it had been thus sufficiently indurated, it presents to the touch and sight an appearance greatly resembling that of the brain when hardened by the same menstruum. A number of minute cells were scattered over the surface of the section. On slightly rubbing any part of the section, but particularly the more

external part of it, with the handle of the scalpel, its apparently homogeneous structure at once broke up, and resolved itself into a number of very small, connected, grape-like granules. These same granules imparted to the external surface of the excrescence its peculiar minutely mammillated structure; while their arrangement into nodules, in consequence of the divided and lobulated arrangement of the superficies of the tumor, gave to the whole a striking resemblance to the head of the cauliflower. The accompanying wood-cuts, from drawings of the tumor by Dr. Patterson, give excellent representations of its external form.

“On submitting some very thin slices from the surface of the section of the tumor, to a powerful microscope in the possession of Dr. Reid, it was seen to be composed of a number of cells, arranged in some places in groups, in others in irregular lines. These cells each contained a large nucleus, and this nucleus inclosed several small nucleoli.”

475. *Symp'oms.*—The patient's attention is first drawn to her condition by a watery, inodorous, and almost constant discharge. This discharge may continue for weeks, and sometimes it becomes excessive in quantity, wetting several napkins a day, and yet the patient does not become sufficiently alarmed to apply for medical advice. In the course, however, of a few weeks, the discharge becomes tinged with blood, or considerable hemorrhage may come



FIG. 25.

on during or after intercourse, or during defecation; in either of these cases the patient is generally alarmed, and consults her physician. As the disease progresses, this hemorrhage becomes more frequent and plentiful; sometimes alarming hemorrhages are brought on by coition or defecation, and an examination will often cause severe flooding. If an examination be now made, a tumor of larger or smaller size will be found attached to the os uteri, of a soft and granulated feel, and bleeding on the slightest pressure. It may be attached to either lip of the os, or involve the entire cervix; when large, the upper part of the vagina is dilated, either anteriorly or posteriorly, to make room for it. When brought into view by the speculum it is of a bright flesh-red, and its granulated or fringed character will be readily revealed. There is hardly ever any pain with this disease, and an examination with the finger or speculum produces no uneasiness. The progress of the disease is very variable. In some cases where the hemorrhage is very frequent or profuse, it makes fearful inroads on the constitution, the appetite fails, dyspeptic symptoms appear, and, in some cases, general dropsy supervenes, and the patient is rapidly carried off, not by the extent of the local disease, but by the loss of fluids consequent on it. In other cases the disease may continue for two or three years, or even longer, when the patients die, worn out by the constant drains on the system by the discharges and hemorrhage.

476. *Diagnosis.*—This tumor may be distinguished from polypi, and fibrous tumors, by its softness, granular surface, and profuse watery discharge. From cancer, by the discharge, which is never fetid, as in cancer, by there being no pain, and by the distinctness, mobility, and softness of the growth, and by the peculiarity of its origin from the os.

477. *Prognosis.*—There can be no doubt but that this is a dangerous disease; still, if seen at its commencement, and properly treated, a favorable result may be looked for. Dr. Simpson's patient recovered after excision of the cervix, and the disease did not recur. Colombat reports a case of this disease, treated in the same manner, and there was no return of it. Boivin and Duges report a case cured. Dr. Montgomery one

Dr. Churchill reports a case treated by deep cauterization; the patient was well two years afterward.

478. *Treatment.*—Two methods of treatment are presented to the practitioner as giving a probability of success; these are, removal of the tumor by cauterization, or by excision of the cervix uteri.

Of these two methods of treatment, Eclectics would choose cauterization, from the great success which has followed its employment in their hands, in the removal of malignant growths. Cauterization, however, to be effectual, should be deep enough to destroy the base from which the tumor springs, as we have seen that the cervix at this point is generally infiltrated with a cancerous deposit, which will rapidly reproduce the morbid growth. Of the escharotics we will have our choice of three, the potassa fusa, chloride of zinc, and arsenious acid. The first has been fully described already, the second is very effective if skillfully used, and the last is especially recommended because it is attended with less pain. If we use the chloride of zinc, we make a paste of equal parts of this and gum Arabic, adding a small portion of *Sanguinaria*. It should be thoroughly applied and rapidly pushed to the complete extirpation of the growth, the vagina being protected by the use of lint wetted with glycerine. The arsenious acid is used with a paste of iron, as directed under the head of cancer of the uterus, and of the strength deemed necessary in the case. If the parts are not irritable, and the growth not rapid, it may be weak and painless.

479. *Excision of the Cervix Uteri* has been frequently performed for different diseases, and with variable results.* “The mortality of the operation itself is about one in six or seven.” Of all the methods of operating, Dr. Simpson’s is the simplest, and on this account preferable. The patient is placed upon the face, the body being situated across the bed, and the lower extremities hanging over it, as in the operation for hemorrhoids. The operator is thus enabled to make the incision, through the cervix uteri from behind forward, and thus avoid wounding the peritoneum, which extends down much further behind than in front. A strong pair of vulsellum-forceps is then introduced into the vagina, and attached to the cervix. This may be done

through a speculum, if the cervix is not much enlarged; if it is enlarged, the vulsellum will have to be guided and attached with the other hand. Having fixed the vulsellum, the cervix should be gradually and cautiously drawn down, until it appears so far beyond the vulva as to allow of the excision above the morbid growth. As the uterus retracts strongly as the incision is made, the line of the incision is rendered uneven and confused. To remedy this defect, Dr. Simpson thinks that it would be preferable to use a pair of large, curved, blunt-pointed scissors. By this means we would be enabled to surround and embrace the whole cervix at once, and having cautiously and carefully adjusted their edges to the very points which we wish to divide, and thus calculated by this preliminary step the exact limits of the incision; we may then immediately complete the amputation of the part by one or two strong and rapid strokes of the instrument. As soon as the excision is completed, the uterus immediately ascends to its natural position. Serious hemorrhage very rarely occurs after this operation; when it does, it may be checked by plugging the vagina. Such symptoms as may arise after this operation, should be treated on general principles. The success attending it will depend upon whether the entire morbid growth was removed; for if but a single cell remains, it will probably be reproduced.

CANCER OF THE UTERUS.

480. This is one of the most fatal and distressing maladies to which the female is liable; it is the most irresistible in its progress, and the least amenable to treatment, without it is seen in its earlier stages. Females of any age are liable to it, though it more commonly occurs after child-bearing, and about the time of the cessation of the menses. In four hundred and nine cases of cancer of the uterus referred to by Boivin and Duges, they occurred in the following ratio:

Under twenty years of age,	.	.	.	12
From twenty to thirty,	.	.	.	83
" thirty to forty,	.	.	.	102
" forty to forty-five,	.	.	.	106

From forty-five to fifty,	95
" fifty to sixty,	7
" sixty to seventy-one,	4
Total,	409

481. According to that close observer, Prof. Rokitansky, "Cancer of the uterus always attacks the cervix in the first instance, and especially that portion which projects into the vagina; the primary occurrence of carcinoma at the fundus uteri is so rare, that the above observation may be considered as an absolute rule. It is contrasted, in this respect, with fibroid and tubercular disease of the uterus, and it presents a similar contrast in reference to its extension and ulcerative destruction.

482. "Opportunities very rarely present themselves for investigating the early stages of cancer in the dead subject; according to a few observations, carcinoma, when closely examined, appears to consist of dense, whitish, retiform fibers, differing from the normal texture of the vaginal portion of the uterus in which they are found, and in their very minute meshes, a pale, reddish-yellow or grayish translucent substance is deposited. This morbid growth is inserted into the uterine tissue, without well-marked boundaries; it occupies a various extent, and from accumulating at certain points, gives rise to the irregular nodulated character and the well-known induration which accompanies the enlargement of the cervix.

483. "Medullary cancer, in the first instance, appears as an infiltration of a white lardaceous-cartilaginous or lax, encephaloid matter, in which the uterine fiber disappears. As the deposit increases, the vaginal portion of the cervix assumes an uneven nodulated character, and appears hard and elastic to the touch. Cancer of the uterus very rarely presents itself in the shape of isolated globular growths. As the cancerous degeneration proceeds, and especially on the commencement of the stage of metamorphosis, with its consequent new formations, particularly if they belong to the medullary variety, the lower segment of the uterus undergoes a very considerable and rapid enlargement; at last, we find a callous, loose, spongy ulcer, developed in the usual

manner, which discharges a very fetid, greenish-brown, sanguous and sanguineous fluid, and, as it extends, generally causes a progressive infiltration of cancerous matter. The tumefaction of the cervix and fungoid excrescences not unfrequently close up the orifice, and the consequent enlargement of the womb will be the larger, the more copious the secretion of mucus.

484. "Cancerous degeneration of the uterus is, generally, in a very remarkable and distinct manner, confined to the vaginal portion; still, there are frequent exceptions to this rule, as the disorganization is sometimes found to extend, with great rapidity, to the body, and even to the fundus of the uterus; this is particularly the case, if the os tincæ has already been attacked by ulceration. The disease may spread downward, and involve the vagina, thus establishing vaginal cancer. It may extend in other

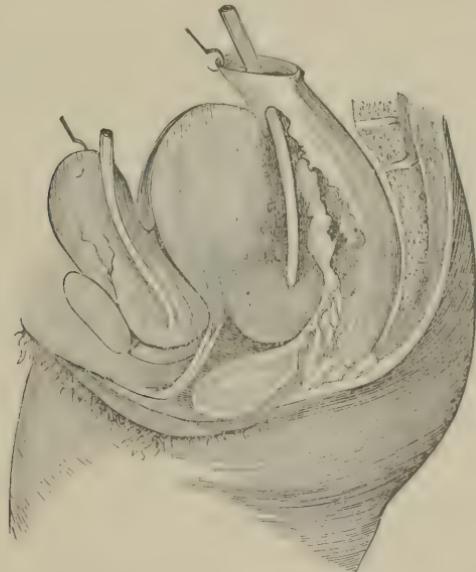


FIG. 26.—CANCEROUS ULCERATION OF THE UTERUS, INVOLVING THE RECTUM AND BLADDER.

directions, and thus give rise to cancerous degeneration of the rectum, the bladder, the pelvic, cellular, and adipose tissue, and

the peritoneum; the uterus thus becomes fixed in the pelvis, and, at last, we find the peritoneum attacked, cancerous growths being formed upon it and its tissue, or perforating it, especially in the shape of medullary masses.

485. "Cancerous ulceration spreads in the same direction; in rare cases we find the greater part of the uterus, and even its fundus destroyed. The destructive process, when attacking the vagina, sometimes predominates on the anterior, sometimes on the posterior surface; sometimes it attacks both equally, and may extend downward almost to the external orifice. It also involves the degenerated parieties of the rectum and of the bladder, and generally produces extensive communications between their cavities and the original cancerous sinus. It finally extends, in the shape of sinous passages, through the remainder of the cancerous mass that fills the pelvic cavity, to the pelvic bones. In this manner a large cavity, with fungoid parieties, is at last established, which occupies a greater part of the uterus and vagina, and opens into the cavities of the rectum and the bladder; above, it is closed in by the fundus uteri and the adherent rectum and cervix *vaginæ*, as also by the cæcum and small intestine, which are agglutinated to these parts, and at last it penetrates into the cavity of the peritoneum or the intestines. The contents of the cavity are cancerous ichor mixed up with fecal matter, urine, and gangrenous tissue.

486. "Uterine cancer is, in most cases, a primary disease, and generally remains so for a long time, if not throughout the sole carcinomatous affection of the organism. However, it is sometimes developed concurrently with, or consecutively to, mammary and ovarian cancer; or, it is accompanied by degeneration of the adjoining tissues above-mentioned, and of the lymphatic glands, which must be explained upon the theory of propagation by contact; or it is associated with cancer of the peritoneum, of the liver, stomach, and the breasts, with cancer of the bones, with mollites ossium, ovarian cancer, and universal cancerous deposit, as a consequence of the resulting cancerous dyscrasia."

487. *Symptoms.*—In the first stages of this disease, the symptoms are so slight as to scarcely arouse the attention of the

patient ; in fact, in many cases the disease makes great progress before she considers that there is sufficient cause to consult a physician. The earliest symptoms consist in the derangements of the catamenia, if the disease occurs before the cessation of this discharge ; thus, the menses may appear more frequently, as often as every two or three weeks, or their appearance may be retarded. The menstrual secretion is generally much increased in quantity, though it may in some cases be decreased or even suppressed. There is nearly always present, in the forming stage of cancer, a leucorrhæal discharge, of a white or yellow appearance ; this may be profuse, but it is generally small in quantity, without the patient has had a long-continued discharge of this kind ; this discharge may be continuous or intermittent. Previous to, or immediately after the catamenial period, this discharge may be tinged or streaked with blood, or after any local excitation, as coitus, violent emotions, severe exercise, etc.

488. As the disease progresses, the patient will feel a constant dull aching pain in the small of the back, attended by a weakness at that point. This pain may extend down the course of the sciatic nerve, presenting all the symptoms of sciatica ; or it may extend down to the perineum, or down the inside of the thighs. There will also be ovarian pain present ; it may be located in either, or in both ovarian regions. The hypogastric pain, or the pain in the lower part of the hypogastric region immediately above the pubis, is not generally present, until the stage of ulceration is manifested. With these pains, which are generally intermittent, and scarcely ever severe, the patient feels a sense of weight in the pelvis, an uneasy tenderness, and sometimes slight pains, especially during the menstrual period, or after severe physical efforts.

489. As the disease becomes confirmed, and ulceration commences, all the above symptoms become aggravated. The lumbo-sacral, ovarian and hypogastric pains become aggravated, the pains in the course of the sciatic nerves, in the perineum, and down the inside of the thighs, if present, become very severe. In the majority of cases, the uterine pains now become very severe. They are described by some as *lancinating*, as though

knives were plunged into the body; by others, as burning, as though a coal or hot iron was applied to the uterus. These pains though continuous, are greatly aggravated at times, when they extend to the back, to the ovaries, down the sciatic and crural nerves; in fact, follow the course of all the nerves that pass out of the pelvis. In some few cases, there will be little, if any pain present. A very marked symptom of cancer of the uterus is a severe and circumscribed pain about the rectum and anus, simulating very much a severe attack of piles; this pain is almost invariably increased when the patient goes to stool.

490. The severe suffering, and the profuse discharges that sometimes occur, soon affect the general health of the patient; her appetite becomes poor, marked symptoms of indigestion develop themselves, the bowels are irregular, sometimes constipated, at others, there is a diarrhea, or these alternately. The patient though still retaining her fullness of habit, has a blanched and colorless appearance, or, as is most generally the case, a peculiar waxy, yellowish-white color. By degrees, the patient is gradually exhausted and debilitated. The digestion becomes more deranged; she is troubled with flatulence, vomitings, and fever. These symptoms mark the close of the disease; for under these intense sufferings the patient rapidly sinks.

491. *Discharges.*—Up to the commencement of ulceration, the discharges are not changed in character, though they are usually augmented in quantity; sometimes, however, they are streaked with blood at times. As soon, however, as ulceration has commenced, the discharges are entirely changed in character, though they are usually augmented in quantity; its color varies from a dirty-white to a dark brown, green, or black, and its odor becomes almost insupportably fetid, so much as to constitute a great source of suffering to the patient. Sometimes it becomes very ichorous, excoriating the parts over which it flows, producing an erythematic inflammation of the vulva, extending to the anus, and sometimes down the thighs. If the ulceration involves the bladder or rectum, opening into their cavities, there will be a constant and involuntary escape of urine, and of fecal matter and flatus.

In this case, the condition of the patient is truly pitiful, and death becomes to her a welcome visitor.

492. Upon making an examination in the forming stages of this disease, the cervix will be found somewhat enlarged, indurated, and presenting a nodulated character. The os uteri will be more or less open, and its edges will feel indurated and hard. The color of the cervix is changed in the stage of deposition; instead of presenting a pale-rose red, its natural color, it becomes of a dark red or purplish color. The cervix uteri will not present the same degree of moisture as in health, but will feel dry and rough. As the disease continues, the induration will be found to extend, *the uterus loses its mobility*, and gradually increases in size, sometimes to such an extent that it can be felt above the pubis.

493. When ulceration has taken place, an examination will cause great pain. The ulcerated surface will be found rough, unequal and tender on pressure, and the finger, when it is withdrawn, is covered with a fetid sanies, and occasionally tinged with blood. In some cases the ulceration will be deep, and filled with a fungous substance projecting beyond the edges of the ulcer. The ulcerated surface has a grayish color, and its edges are of unequal elevation, and very uneven and ragged; the fungous growth from the ulcer is generally of a purplish or dusky red color.

494. *Diagnosis.*—In the first stages of cancer of the cervix uteri, it will be very hard to distinguish it from induration following inflammation. Dr. Bennet states that inflammatory induration "is the disease to which most authors and practitioners give the name of incipient cancer." He says: "I must again repeat, that my own experience, as well as the analysis of that of others, leads me to the conclusion that cancerous growths of the uterus, in the incipient or non-ulcerated stage of their development, are always, or nearly always indolent, and give rise to no symptoms sufficiently decided to induce patients to complain, or to seek for advice; and thus we can explain how the disease, in its incipient stage, does not come under the notice of the practitioner." He also says: "It is more than probable that cancer of

the cervix uteri, instead of being very slow in its development, and remaining for years in the first or non-ulcerated stage, is, on the contrary, very rapid in its growth and progress, especially in women who still menstruate."

495. Dr. Bennet states distinctly that cancer rarely, if ever, arises from, or is caused by, inflammation of the cervix. How, then, are we to account for the numerous cases of non-ulcerated disease of the cervix, which, after a longer or shorter time, have become perfectly developed, ulcerated cancers, destroying the uterus, rectum, vagina and bladder? Inflammatory induration of the cervix uteri is likewise a secondary process, which has to be preceded by inflammation, and all its attendant symptoms, and, according to Dr. Bennet, in the most of cases, by ulceration; while the induration of the first stage of carcinoma uteri will be found, in the most of cases, not to have been preceded by the symptoms named as diagnostic of inflammation and ulceration of the cervix uteri. It is true that similar symptoms are developed in the non-ulcerated stage of cancer, but they never precede the induration.

496. We would then distinguish the diseases by the fact, that inflammatory induration is always preceded by morbid symptoms of inflammation of the cervix, by the purulent discharge which is the pathognomonic symptom of that disease, and its stationary character, not generally increasing in size, and never involving adjacent structures, or causing immobility of the womb.

In the ulcerative stage we have to distinguish it from *corroding ulcer*, and *venereal ulceration*. We distinguish it from corroding ulcer, by the immobility of the uterus, and by the fetid character of the discharge. From venereal ulceration, by the morbid deposition, and immobility of the uterus, and by the depth and irregularity of the ulceration; venereal ulcers being generally smooth and even, no fungous growths attending them, and the pain present is neither so constant nor acute. There are no other diseases of the uterus with which ulcerated cancer could be confounded, unless we except a case reported, in which an intra-uterine polypus ulcerated, and there was a constant fetid discharge for more than two years; this case was decided to be cancer by several eminent practitioners.

497. *Prognosis.*—This, probably, is one of the most fatal diseases to which the female is subject, yet, if seen in an early stage and properly treated, it may be cured. If the disease is still confined to the cervix, our prognosis should not be unfavorable; but, if it has extended beyond this, not much can be hoped for, so far as a radical cure of the affection is concerned; we may however, greatly alleviate the suffering of the patient, and prolong her life.

498. *Treatment.*—When cancer of the uterus is confined to the cervix, we may entertain strong hopes of being able to remove it by local applications. I need hardly mention that I consider excision of the cervix, in these cases, bad treatment,—in but very few cases in which it has been resorted to, has the patient recovered, while the malignant character of the disease, in these few, has been disputed. The removal of the disease, however, by caustic, has been so often accomplished, that very few at this day will dispute the fact, that cancer of the uterus has been removed by this means.

499. The caustics that may be most successfully employed in these cases are the potassa fusa, chloride of zinc, and arsenious acid. The last is preferred by some because its operation is quite painless.

In using the potassa, the patient should be placed upon her back, in the usual position for making a vaginal examination. The patient should then be placed under the influence of chloroform, as this not only prevents pain, and the severe shock upon the system consequent on the severity of the cauterization, and thus greatly conduces to subsequent recovery, but it likewise places the patient completely under the command of the operator. A large glass, or Ricord speculum, should then be introduced, and the cervix brought fairly in the center of it. Cotton, saturated in a solution of vinegar and water should then be introduced around the cervix, carefully isolating it from other parts, that they may not be injured by the caustic; it would be well if the Ricord speculum is used, to introduce the cotton between the lower blades of the instrument. Having the parts thus arranged, the stick potassa should be applied, by means of a proper caustic-holder,

to the entire indurated portion of the cervix. The potassa should be firmly applied, and continued until the entire cancerous structure is removed; this will take from ten to thirty minutes, according to the extent of the growth. The point to be recollectcd is, that if the entire indurated mass is not removed, the malignant growth will be reproduced, and there is no more danger from a thorough cauterization at once, than if it has to be repeated five or six times to accomplish the same purpose. As soon as the cauterization has been effected, the vagina should be well syringed out with vinegar and water through the speculum, and when this and the cotton surrounding the cervix is withdrawn, the vaginal injections should be repeated, and continued at short intervals until the pain ceases. The slough, formed by the potassa, will separate in from ten to fifteen days, according to the depth of the cauterization. At this time, a careful examination of the parts should be made, and if any indurated portions remain, the cauterization should be repeated. The ulcer left after cauterization, will have to be watched until the cicatrization is completed, keeping down any tendency to morbid growth or induration, by the occasional application of the potassa, or chloride of zinc paste, described below.

500. This cauterization will be followed in the most of cases by considerable inflammation. This may be counteracted by the application of hot fomentations of hops, or stramonium leaves, above the pubis, and over the vulva, with the frequent use of warm vaginal injections of water, or a decoction of stramonium. These measures may be aided by the administration of the sedatives in the usual doses, and also by the hypodermic injection of morphia.

Instead of this, I have sometimes given very marked relief by the use of small doses of *Nux Vomica* and *Pulsatilla*, especially when there is abdominal pain and tenderness.

501. The chloride of zinc may be used either run into sticks and applied in the same manner as the potassa, or formed into a paste. The pure chloride of zinc if run into sticks, deliquesces so rapidly, that it can not be well applied; an impure article, how-

ever, is sometimes made in this form, which answers the purpose admirably. The zinc paste may be made by taking the pure chloride in crystals, and letting it stand uncorked, until it has deliquesced; we then have a pure saturated solution; this may then be mixed with sufficient pulverized *hydrastis canadensis* to form a paste. In using this paste, it is spread on a strip of leather of sufficient size to cover the diseased part. In using the chloride of zinc, the same precautions should be used to protect the adjoining structures, but instead of the vinegar and water, a solution of carbonate of soda should be used. In using the arsenic, make a paste by throwing the hydrated sesqui-oxide of iron on a filter paper until it attains the proper consistence, and to this add the arsenious acid in the proportion of 3*j.* to 3*j.* to the 3*j.* The vagina being protected as before, the ointment is introduced on pledgets of lint, crowding it into every cavity, and making its application as thorough as possible. It may remain for one or two hours, the woman being in a recumbent position, and it is repeated every day until the growth is thoroughly destroyed, and can be removed with the forceps. The ulcer may then be dressed with powdered sulphate of iron.

502. Where the disease has extended to, or commenced in the cavity of the uterus, the chance of saving the patient is very slight. The following treatment, however, which I copy from the Eclectic Surgery (page 195), is said to have proved successful.

“ Your first local measure should be the injection of simple warm water into the vagina and cavity of the uterus. The parts are sometimes so very sensitive, that even this will give the patient considerable pain. Were you, in such a case, to inject ever so weak an alkali, or even soap and water, it might excite dangerous inflammation.

“ Continue the warm water till it occasions no pain, then begin with weak soap-suds, increasing its strength as the patient can bear; in a few days, you will probably be able to add a little mild caustic. Increase the quantity till you can use a saturated solution. All these lotions must be thrown into the womb, by means of a catheter.

“ Directions for making these uterine injections may not be unnecessary. Place a finger of one hand on the *os uteri*; and

with the other hand direct the catheter along the finger that is or the os, till it also comes in contact with the uterus. Slip the finger a little aside, and the instrument will generally pass in; if not, turn it round and round awhile, pressing gently, till it finds its way in. Having carried it in so far as you conveniently can, throw in your fluid. For this purpose, take care that the point of the syringe is exactly fitted to the outer end of the catheter, in order that the fluid may be prevented from rushing back, as it may be necessary to use considerable force. The quantity of fluid you are able to get in at first may be very small. Endeavor to go on increasing in quantity, as well as strength. The catheter or tube made use of should be of silver. If at any time the caustics should produce irritation and inflammation, or they should occur during the treatment, suspend the irritating injections, and use Slippery Elm Mucilage. Give the patient a mild emetic, followed by diaphoretics, with perhaps an active cathartic or two, using such other measures as the case may indicate.

"As a general rule, the injections must be repeated at least once a day. Twice a day will be still better, when they do not produce too much pain or irritation. The cavity of the uterus, as well as the vagina, should each time be well washed out with them."

503. In those cases in which the cancerous deposit has extended to the vaginal walls, or the tissues adjoining the uterus, and in which the uterus is immobile, and especially in those cases in which the ulceration has extended beyond the uterus, a radical cure is impossible. Here the attention of the physician will be directed to the alleviation of the distress of the patient, and to checking the rapid progress of the disease. In the furtherance of this object, every possible cause of disease should be removed, and any injurious habits of the patient should be stopped. The digestive powers should be stimulated, by the use of the vegetable tonics and iron, and her diet should be nutritious. The secretions should be kept in good condition, the bowels regular, and the kidneys and skin stimulated to a normal performance of their functions.

504. Cleanliness is of very great importance in alleviating the sufferings of the patient. For this purpose, vaginal injections of warm water should be frequently used; in many cases, the addition of castile soap, so as to make a weak suds, will be found of marked benefit. If there is much pain, narcotics may be added to these injections. This will be found a much more preferable mode of using them than any other, so long as it gives relief. Thus, we may use in this manner a decoction of Stramonium, a watery solution of the extracts of Conium, Hyoscyamus, Belladonna, or a solution of some of the preparations of Opium. A decoction of Carrots has also been recommended as beneficial, as well as water acidulated with Acetic Acid, (3ss to Oct. j), or Nitric Acid (m.x). These acidulated injections not only relieve the pain, but they are likewise of much benefit in checking the discharges.

505. Nothing has given me so much satisfaction in the treatment of these unpleasant cases as the use of Carbolic Acid and Glycerine. In some it may be used of the full strength (3iv. to xv.j.), but in others this will require to be diluted with one to four parts of water. My rule is to use the strength that will give the greatest relief to pain. It is anæsthetic, removes the fetor, and checks the discharges, lessens the rapidity of the growth, and in some cases markedly lessens the size.

506. In the advanced stages of the disease, the narcotic injections will not be sufficient to relieve the pain, and their internal administration will be found necessary. All the other agents named should be tried before resorting to the preparations of opium, and when this agent is resorted to, it should be combined with some laxative agent, to overcome its constipating effects. To relieve the intolerable fetor of the discharges, we may use injections of the Liquor Soda Chlorinata with much advantage.

507. The question may here arise, can the entire uterus be removed in cases of cancer, with any probability of success? In answer to that question Velpeau says, "That the operation has been performed twenty-one times in twenty years, and of all of these, not one has been permanently cured." As this is the case, a description of the method of operating would be useless.

METRITIS—INFLAMMATION OF THE UTERUS.

508. We may divide inflammation of the womb in the unimpregnated state into three varieties, according to the intensity of the disease, and its location. Thus, we have acute inflammation of the entire structure of the uterus, chronic inflammation; and inflammation of its mucous membrane or internal metritis. As inflammation of the cervix uteri has been already described, the description of these forms of inflammation will apply more particularly to the body and fundus of the organ, i.e., all parts above the cervix.

ACUTE METRITIS.

509. This is a very rare affection in the unimpregnated female, and this rarity of the affection is a natural result of the peculiar dense, non-vascular and non-cellular structure of the uterus. Tissues of this nature, says Dr. Bennet, are but slightly susceptible to inflammation as a necessary consequence of their peculiar structure; if the uterine system is exposed to the causes of inflammation, its periphery, the mucous surfaces, the cervix or lateral ligaments, which are so much more highly vitalized, are generally the regions attacked. When the state of the uterus is modified by the extraordinary development and vitalization that occurs during pregnancy, or during the increase of a large, fibrous tumor, we observe a different state of things. If the uterine system is then exposed to the causes of inflammation, especially after parturition, the body of the organ is frequently attacked, and metritis, observed under these circumstances, manifests a degree of intensity and a virulence unknown in the unimpregnated state of the uterus, but quite consistent with its modified structure. In reality, the uterus is, anatomically, a perfectly different organ when unimpregnated, and when developed by impregnation; and its pathology is as different in the two conditions as its anatomical condition.

510. Simple acute metritis very rarely occurs in young unmarried persons, and still more rarely in those who have passed the period for child-bearing. In the first case, the uterus still retains its non-vascular and fibro-cartilaginous character, though

subject to the periodical congestion of blood attendant on menstruation. In the aged, the uterus is atrophied, inactive, and torpid, less liable to inflammation than most any other tissue of the body.

As regards the seat of the disease, the entire uterus is more or less affected, though its peritoneal investment is but rarely involved.

511. *Causes.*—Simple acute metritis arises more frequently, perhaps, from arrested menstruation, than from any other cause. During the menstrual period, while the uterus is congested, and the center of a determination of blood, any cause that will arrest this secretion may give rise to the disease. Thus, during this period, exposure to cold by wet feet, sitting on damp ground, etc., may prove exciting causes. Apart from the menstrual period, inflammation very rarely arises, and, if it does, it is probably the result of some physical injury; of a blow, or a severe fall, or of deep cauterization of the cervix. It may, also, arise, in some few cases, from an extension of inflammation from the vagina.

512. *Symptoms.*—The symptoms of this disease are both general and local. The general symptoms are those which are common to the phlegmasiae, and they vary in intensity, according to the severity of the inflammation. In some cases, the disease may be ushered in with chilliness, which is succeeded by fever; in other cases, the local symptoms are first manifested, the general symptoms being developed afterward. The pulse is generally quick, but not small and thready as it is when the peritoneum is involved; the skin is hot and dry, the feet generally cold, the bowels constipated, the stomach irritable, and the tongue covered with a white fur; thirst, headache, and want of rest, sometimes with slight delirium, are present, as in all febrile diseases.

513. The most prominent local symptoms are, a severe and deep-seated pain above and behind the pubis, radiating from this point to the ovarian regions, and sometimes down the thighs, accompanied by a very disagreeable sensation of weight and uneasiness in the pelvis. There is, also, generally a constant and dull aching pain in the back. Pressure over the hypogastric region aggravates the pain, and it is also increased during defeca-

tion and micturition. Upon making an examination, the vagina will be found harsh and dry, and the secretions arrested. The inflamed uterus is so sensitive, that its elevation by the finger in the vagina will give rise to severe pain, and often to an instantaneous sensation of nausea. Dr. Bennet states that, notwithstanding the extreme sensitiveness of the uterus, it is possible, in every case, to ascertain, without putting the patient to any great amount of pain, that it is the uterus itself which is the seat of inflammation, and not the adjoining tissues. The sensitive tumor is the immediate continuation of the cervix, occupying the median line, and is equally painful on the right and left of that line; unless, however, the uterus be naturally lying transversely from right to left, as is sometimes the case, when the inflamed organ will extend more to the right than to the left side. The rectum and bladder are very frequently irritated in this disease, from their close relation to the uterus; thus there is very frequently pain in the region of the bladder, with dysuria, and the irritation of the rectum causes more or less tenesmus, with an increased secretion of mucus.

514. If inflammation of the uterus arises during the menstrual period, the secretion will be suddenly checked, while if it arises during the interval, the secretion will be suspended until the inflammation is subdued. As has been already stated, the natural mucous secretion of the uterus and the upper part of the vagina is checked while the inflammation is at its height; but on the decline of the inflammation, a copious discharge of a variable nature will often take place.

515. *Treatment.*—The treatment of this inflammation is not difficult, if seen in its commencement. In the first place, the treatment should be directed to a removal of the congestion and determination of blood to the pelvis. For this purpose, such measures should be employed as will control the circulation, lessen the temperature, establish secretion, and remove the local irritation. The sedatives are useful here, as in other inflammatory disease, Aconite being the remedy most commonly indicated. It may be combined with Macrotyls when the pains are tensive,

extending to the small of the back ; with *Rhus* when the pain is burning and the patient complains of frontal pain, and has the peculiar appearance of the tongue (red and prominent papillæ on the upper surface of the tip) ; *Apocynum* if there is a disposition to menorrhagia, or œdema of the feet ; *Dioscorea* if there is peritoneal pain or tenderness ; *Apis* if there is itching with burning, and painful micturition ; *Gossypium* (tincture of the green root) if it is near the menstrual period, and the discharge does not come on at the usual time ; *Santonin* if there is difficulty and pain in passing urine, or retention ; *Belladonna* if the patient is dull, inclined to sleep, or there is tendency to incontinence of urine ; *Gelsemium* if the urine is scant and passed with difficulty ; *Collinsonia* if there is irritation of the rectum with muscular contraction ; *Hamamelis* if there is fullness and laxness of the perineal tissues, and evidences of venous congestion.

516. I have named some of the more common remedies that may be employed in these cases, with the most prominent symptoms calling for their use. I prefer a single strong and marked symptom to any number of indistinct ones, and I think the reader will find the ones named very positive and certain. We have our cases in which the first indication is to relieve irritation of the stomach, or simple nausea, which is very common. And we may find that *Ipecac* with our *Aconite* in one case, or small doses of *Nux* in the other, will answer an excellent purpose. Then we have cases in which the dirty pallid tongue points to *Sulphite of Soda*, or in which the peculiar fetor of breath and vaginal discharges calls for *Chlorate of Potash*. There are cases with full dirty tongue, full tissues, and especially venous fullness, where *Podophylin* is an excellent remedy. When the patient suffers from morning chills I have found the *Ignatia* a most excellent remedy, giving it with the *Aconite* or *Rhus*, as may be indicated. If the patient is nervous and restless *Pulsatilla* may be given, after the acute symptoms have been removed.

517. Rest is an essential part of a good treatment, and if it is not secured, the disease will be very stubborn, and will frequently assume the chronic form.

The patient may have a *sitz* bath, or may sit over a vessel and have a vapor bath, or fomentations of hops, stramonium or poppy leaves may be used. Sometimes benefit is derived from quinine

inunction over the abdomen, or if there is much tenesmus, an enema of Opium and Lobelia sometimes gives relief.

CHRONIC METRITIS.

518. Chronic inflammation of the body of the uterus, is of much more frequent occurrence than the acute form. It occurs most commonly in the married, and in those who have had frequent labors, either natural or unnatural. It is not, however, confined to these, for unmarried persons who have passed the age of puberty, are also liable to the affection. Chronic inflammation of the uterus, unlike the acute form, does not generally extend to the entire structure of the uterus, but is confined to a circumscribed part of it. Dr. Bennet states: "That in this partial form, it is observed in nine cases out of ten, in the posterior wall of the uterus in its inferior region, immediately adjoining the cervix. The predilection of chronic metritis for this particular region is probably accounted for by the band of longitudinal muscular fibers which pass into the posterior region of the cervix, from the posterior wall of the body of the uterus, chronic metritis being generally the result of extension to the uterus of chronic inflammation of the cervix. It may, however, exist in the anterior uterine wall, or laterally."

519. *Causes.*—Chronic inflammation of the body of the uterus arises most frequently from an extension of deep-seated inflammation of the cervix; it may, however, be the termination of acute inflammation, whether puerperal or not. It may also arise from syphilis, which, by infecting the whole system, often becomes a cause of uterine disease.

520. *Symptoms.*—The symptoms of chronic metritis are sufficiently well marked, if closely observed. In a state of health, there are no indications by which the patient may know that such an organ as the uterus exists. In chronic inflammation, however, both its existence and locality are well marked, by the unusual sensations felt in that region, as a sensation of weight and dragging down, pain more or less severe, etc. The pain experienced, is referred by the patient to the region immediately above and behind the pubis; it is generally constant, dull and deep-seated. There is also a continuous dull, heavy pain in the small of the

back, or a sensation of great weakness at that point; this pain frequently extends around the groins, and to the ovarian region. Another marked symptom of uterine disease which is present here, is a constant pain or soreness in the thighs, sometimes extending to the entire lower extremities. Exercise almost always aggravates these symptoms, even the erect position often increases the pain.

521. The rectum and bladder almost always suffer either directly or sympathetically with the diseased uterus. Thus, the continuance of the inflammation for any length of time causes an enlargement of the organ, and thereby an increase of its weight. This increase of weight in the majority of cases, causes more or less displacement; thus, if the inflammation is located in the posterior wall of the uterus, the tumefaction and enlargement of this part will cause a displacement of the fundus backward against the rectum. This displacement does not generally involve the entire organ, the cervix not being thrown forward against the bladder; we have not, therefore, retroversion, but retroflexion, the cervix forming an angle with the body of the uterus. This displacement of the uterus backward, and its consequent pressure upon the rectum, gives rise to inflammation of the bowel, marked by pain, especially toward the anus; it also causes at times, a marked tenesmus, with a hyper-secretion of mucus, which is discharged each time the patient goes to stool. Another effect of this displacement, is a difficulty in passing the faeces, and when they are passed, the action of the bowels is always accompanied with severe pain from the pressure of the contents of the bowel upon the inflamed uterus. If the anterior wall of the uterus is the part mostly affected, the displacement of the uterus will be anterior, and its pressure will be upon the bladder; this, however, seldom occurs.

522. Upon making an examination in this disease, the uterus will generally be found enlarged and very sensitive to the touch. Dr. Bennet states, "that when the inflammation is partial only, the finger passed carefully behind, before, and on the sides of the uterus, carrying the cul-de-sac of the vagina before it, so as to explore its walls, readily discovers the seat of the disease.

Instead of the finger passing from the base of the uterine neck on to a smooth, insensible surface, a continuation of the plane formed by the cervix, it meets with an exceedingly sensitive elevation or protuberance, sometimes quite regular, sometimes irregular and knotty. In the latter case, however, the nodosities that diversify the tumefied surface are all perfectly spherical; there are no knife-back ridges or sharp irregularities. Pressure on this tumefied surface is exceedingly painful. Occasionally there is no perceptible tumefaction, but merely an exquisite sensitiveness in a limited region of the uterus; pressure giving rise to the sensation of sickness. The uterus is, in most instances, quite movable, but the attempt to move it is attended with great pain. After the disease has continued for some time, the general health will be found to suffer. The appetite will become impaired, digestion feeble, and the patient emaciated. In these cases the countenance will always present a pale and sallow appearance, with an expression of pain and languor, which is always more marked at the menstrual period."

523. The presence of chronic metritis of the variety we are now considering, does not always give rise to a vaginal discharge; most generally, however, there is a white or transparent leucorrhæal discharge. This discharge sometimes assumes a peculiar dark-brown color for two or three days before or after menstruation, being caused by an admixture of blood corpuscles and mucus thrown off from the lining membrane of the uterus, or from its inflamed portion, during the menstrual congestion.

524. *Treatment.*—If this disease has arisen from an extension of inflammation of the cervix uteri, or if inflammation of the cervix has arisen during the course of this disease, this should first be removed by the means already spoken of. As heretofore named, the acute disease must be treated with reference to a possible chronic inflammation, for many times the patient feeling better, is inclined to dispense with treatment before a cure is effected. It is also well to notice that physical, mental, and sexual rest is indispensable in some cases, and very important in all. If a patient can be sent away from home, where, in addition to rest, there will be change of scene and pleasant company, very

simple remedies will sometimes effect a cure. Here, as elsewhere, remedies must be carefully selected. We have no invariable treatment for chronic metritis. Each case must have its analysis, and the remedies must be selected to meet it especially. We want to know the condition of the body at large, both in its structure and function, and we want to know the exact condition of the uterus and associate organs. The rule is, the better the general health the more surely and rapidly we can remove local inflammatory disease. We want good digestion and blood-making, a good circulation, good nutrition, and good waste and excretion. Our patient may want alkalies, acids, tonics, the restoratives, or agents to act upon skin, kidneys, bowels; and finding the want we do that which is necessary.

525. When we think of special means, it suggests itself that those remedies which influence the reproductive function will be especially important, and so we find it in practice. In some cases the peculiar tensive, twisting pain, with muscular soreness, calls for *Macrotys*, and if the patient is nervous, with the addition of *Pulsatilla*. In many cases it is well to use it for a week before the menstrual period, and until this is well established, and then put the patient upon other remedies. *Rhus* will be found an excellent remedy in some cases, the peculiar appearance of tongue and burning pain being the indication. *Ignatia* is the remedy suggested by morning chills,—“feels better in the open air”—and a sense of constriction and soreness around the waist. Sometimes there is the double indication for *Rhus* and *Ignatia*. The *Mitchella* is a good remedy, and may be used when there is a sense of uneasiness and weight, and weakness of the tissues along the pelvic outlet. *Hamamelis* is a remedy indicated in every case by the lax condition of the tissues, and venous fullness. The *Gossypium* (tincture of the green root) may be given to favor the menstrual flow when it is tardy, scant or arrested, but it must be used with care, for it sometimes increases the inflammatory action. *Iodide of Potash* will prove a useful remedy when the tongue is full, pallid, and leaden colored. The *Iodide of Ammonium* when the patient suffers from dull headache, involving the top and back of the head, or the whole head. The *Bromide of Ammonium* is indicated by hysterical manifestations, in any form, especially by convulsions. To remove inflammatory deposits the

Acetate of Potash may sometimes be used, largely diluted, for days together. If the tongue is pallid and dirty, give the Sulphite of Soda until this condition is removed. If the tongue is full, face sallow, veins full, dizziness, give the minute dose of Podophyllin with Hydrastis.

526. As regards local applications, we will sometimes find the most advantage from the use of the vinegar pack, applied at night, with thorough sponging with cold water and drying in the morning. In some the irritating plaster over the uterus will give good results; it may be used simply to produce a crop of pustules, or to free suppuration. In place of this, thorough quinine inunction to the abdomen may sometimes be used.

INTERNAL METRITIS—UTERINE CATARRH—UTERINE LEUCORRHEA.

527. The seat of this inflammation is the mucous membrane lining the uterus; it may involve the entire lining of the cavity of the uterus and of the cervix, but, in this last case, it is generally complicated with inflammation of the cervix. It may be either acute or chronic, though the disease is most generally seen in the chronic stage.

528. Like the other forms of uterine inflammation, this generally occurs in females between the ages of twenty and forty, though, in some few instances, it may be observed at an earlier or later age than this. It also arises most frequently in those who have had many labors, either natural or unnatural.

529. *Pathological Anatomy.*—According to Prof. Rokitansky, "the uterine mucous membrane is much more commonly discovered in a state of chronic catarrh and inveterate blennorrhea, which is either the residue of acute catarrh, or the result of a similar affection of the vagina; it may occur as a sequelæ of parturition, or as a complication of those morbid growths that bear a near relation to the uterine mucous membrane. The mucous membrane offers a pallid appearance, or there is evidence of previous stasis and inflammation, and it then presents, with the adjoining uterine tissue, a brownish-red, or slaty color; the membrane is tumefied, relaxed, plicated, and secretes a grayish-white viscid mucus, which, during temporary exacerbations, or an

enduring state of more intense inflammation, appears streaked with blood, creamy, yellow, and puriform.

530. "Here, too, we find hypertrophy of the mucous membrane, resulting from chronic catarrh, in the shape of mucous or cellular polypi. They consist of club-headed elongations of the mucous membrane, in which we find a group of closed follicles, or a lobulated tissue, containing a gelatinous mucus, which is discharged from time to time, in consequence of a dehiscence of the follicles. These excrescences occur chiefly at the fundus uteri, in the neighborhood of the insertions of the fallopian tubes, and in the canal of the cervix, a point at which, in the normal condition, large follicles, (ovuli Nabothi,) are found, which occasionally undergo considerable enlargement.

531. "We find that the uterine parenchyma becomes more or less hypertrophied during catarrh, in the same manner as other muscular layers which are subjacent to mucous membranes.

532. "Inveterate uterine catarrhs not unfrequently give rise to stricture and atresiae, and, if the blennorrhea persists, to dilatations of the uterine and cervical cavities. During the progress of dilatation, occurring under these circumstances, the same changes that we have repeatedly met with under similar circumstances, in dropsy of mucous cavities and canals, are sometimes found to occur in the uterus. As a dilatation from the accumulated secretion increases, the uterine mucous membrane is converted into a thin, serous membrane, which secretes a colorless, serous, albuminous fluid, resembling synovia. The uterus appears in the shape of a round, slightly-thickened, hydropic capsule, of the size of a hen's or duck's egg, or a fist. This condition is the only one that really deserves the name of hydro-metra, of which several remarkable instances are related, especially by older writers. The contained fluid may always, or for a long time, remain such as above-described; but it generally undergoes some alterations from the admixture of various products of slight inflammatory attacks, and especially of hemorrhagic exudations of the uterine lining, which give it a chocolate-colored, rusty, or black tinge. Occasionally temporary discharges of these fluids

occur by the vagina during life, after which fresh accumulations take place."

533. Uterine catarrh generally suffices to produce sterility; but it often extends to the fallopian tubes, and there gives rise to changes that are of extreme importance in this respect.

534. *Causes.*—All the causes heretofore spoken of as giving rise to the other two forms of metritis, may give rise to this. Thus, it may arise from exposure to cold during the menstrual period, or after parturition or abortion, from an extension of inflammation of the cervix uteri or vagina, etc. It arises very frequently from the sudden cessation of natural or artificial excretions, as of general or local perspiration, the suppression of a diarrhea, or habitual vomiting, of hemorrhoidal discharges, etc.

535. The predisposing causes of the disease are frequent child-bearing, habitual abortions, excessive sexual intercourse, etc. Any cause calculated to debilitate the genital organs or the general health, will prove predisposing causes of this disease. M. Colombat cites, as predisposing causes of this as well as other uterine diseases in large cities, idleness, effeminacy, a sedentary life, the constant contact of the two sexes, and the frequenting of places where everything inspires pleasure; prolonged watching, dancing, frivolous occupations, and the study of the arts that give new activity to the imagination; erotic reading, the pernicious establishment of an artificial puberty, etc.

536. *Symptoms.*—In the early stage of the disease the symptoms are not very well marked, and its general complication with other diseases of the uterine organs conspire to make its diagnosis extremely difficult. This difficulty in determining the seat of the disease, however, becomes much less as the disease advances. Dr. Bennet states, that internal metritis may be said to exist to a certainty, if the os internum of the cervix is so completely open as to allow the uterine sound to pass freely into the uterine cavity; if that cavity is increased in size, and more sensitive, and if, likewise, there is a more abundant *sero-sanguinolent* discharge accompanied by dull, deep-seated pain in

the region of the uterus itself, that is, behind and slightly above the pubis, and by a certain amount of febrile reaction.

537. It may be stated, as a general rule, that the mucous membrane of the cavity of the uterus never suffers from inflammatory action, without the canal of the cervix is also affected. With the discharge from the cavity of the uterus, therefore, we have more or less of the peculiar secretion from the canal of the cervix, the highly albuminous, transparent, white of egg mucus, the two secretions being intimately mixed. This sero-sanguinous secretion from the uterine cavity is never observed only when the inflammation is acute, or sometimes for one or two days preceding or following the catamenial period. At other times, the discharge from this cavity is of a grayish-white color, or, if the disease is of very long standing, the discharge may be thin, serous, and albuminous, resembling synovia, or chocolate-colored, rusty, or brownish-black. The admixture of the secretions from the canal of the cervix and the uterine cavity, and the constant presence of the cervical secretion in large quantities, prevents us from determining the extent of the inflammatory process in the uterine cavity by the secretions.

538. The secretion from the entire uterine mucous membrane varies much in quantity. Sometimes it is very profuse, obliging the patient to use several napkins per day. The principal part of this discharge consists of the transparent mucus of the cervix, mixed with the secretion of the uterine cavity, which sometimes gives it a greenish or brownish tinge. At other times, the discharge, whether large or small, will consist principally of the secretion heretofore described as coming from the uterine cavity.

539. In some rare instances inflammation of the mucous membrane of the uterus is followed by ulceration. When this is the case, the cavity of the uterus becomes considerably enlarged, and large quantities of pus, blood and mucus collect within it, and are expelled through the os uteri. In a case that I have lately been treating, there was a profuse discharge of mucus and pus from the uterine cavity, but instead of its being continuous, as is generally the case, it would come on periodically, two, three or four times a day, and be accompanied with severe pain, the uterus appearing

to contract upon its contents to expel them. At each one of these paroxysms there would be expelled from a drachm to half an ounce of muco-pus; the discharge would then continue from half an hour to an hour, and then cease until the next paroxysm.

540. According to Dr. Bennet, "internal metritis is nearly always accompanied by a dull, aching pain in the back or ovarian regions, similar to that experienced in inflammation of the cervix, and by deep-seated pain in the region of the uterus. The uterus is generally rather swollen, enlarged, and sensitive to the touch, the entire organ being in a congested, irritable state. Internal metritis is also often accompanied by a slight amount of febrile reäction, occurring at intervals, after exertion, instrumental interference, or at the monthly periods. The catamenia are often disordered, generally manifesting themselves more frequently and more abundantly, lasting longer, and being attended with more pain than usual. Sometimes the flow of blood is so great and so lengthened as to constitute flooding, and this is more especially observed, as might be anticipated, when the sero-sanguinolent discharge is present. With some patients, however, on the contrary, the menstrual secretion appears to be diminished; but in either case it may be laid down as a rule, that the disease is aggravated by the appearance of menstruation. In addition to these symptoms, all the general sympathetic reäctions which are observed in chronic metritis, and in chronic inflammation of the cervix, may be present. As internal metritis is generally complicated with these diseases, we may also have the peculiar symptoms which they present."

541. Inflammation of the uterine mucous membrane in the acute form, may terminate in resolution. This termination, however, is very uncommon, unless the disease is seen at this time, and judiciously treated, the acute inflammation generally running into the chronic blennorrhagic form. When the inflammation has become chronic, there is no prospect of its terminating spontaneously, at least until the age when the menstrual secretion ceases. The periodical recurrence of the menstrual congestion appears to be sufficient to keep up the chronic inflammatory process indefinitely. At the period of the cessation of the menses, this

inflammation likewise ceases; the periodical congestion which has kept it up, having stopped. The effect the disease has upon the system, varies much; thus, in some women of strong constitution, and where the discharge is not large, it may affect the general health but slightly; in other cases, however, the effect of the disease is very strongly marked, the patient is very much debilitated, and it may even occasion death indirectly, by exposing her thus weakened and reduced, to the development of incidental affections, as consumption, dropsy, etc. This debility of the system is caused in two ways; first, by the quantity of the discharge, it often being very profuse, amounting to from one to four ounces per day, and continuing thus for years, it exhausts the system by its constant drain upon it; and second, by sympathy, the stomach and digestive organs always sympathizing more or less with the diseased uterus.

542. *Treatment.*—In the acute stage of this disease, the treatment is very easy, being the same that we adopt in other local inflammations. The warm foot-bath, internal use of diaphoretics, the warm hip-bath, fomentations over the hypogastrium, etc.; in fact, the same treatment recommended for acute metritis, is indicated here. The disease, however, will very rarely be seen presenting these acute symptoms, the patient generally consulting the physician on account of the leucorrheal discharge, and its accompanying symptoms.

543. In the chronic stage, or uterine leucorrhea, the disease is often very obstinate, not yielding very readily to any treatment. Here, if the cervix be diseased, as is very often the case, our treatment should be first directed to its removal, for with the removal of the inflammation of this part, we will have removed the exciting cause of the inflammation of the uterine cavity. The same treatment that has been already recommended for inflammation of the cervix should be pursued here, paying especial attention to the treatment of the canal of the cervix.

544. The constitutional treatment in this disease, is of the first importance, for by restoring the general health and the quality of the blood, we break up the tendency to inflammatory action. Thus, our first object should be to increase the tone of the

digestive organs, and the quantity and quality of the blood; and in accomplishing this, we may make use of such agents as directly increase the tone of the uterine organs. Thus, we may use with much advantage, the various preparations of iron, with the Hydrastis, Helonias, Cornus, Cerasus, Caulophyllum, Senecio, Rumex, etc. These agents not only prove general tonics, but they likewise have a specific effect on the uterine organs, counter-acting the debility produced by the disease. The Ferrated Tincture of Peruvian Bark, or the Compound Syrup of Partridge Berry, with Hydrastis and Carbonate of Iron, will also be found very beneficial agents.

545. With the use of these remedies to restore the general health of the patient, it is necessary to pay strict attention to the condition of the bowels, the kidneys, and the skin. Without the different excretory organs are stimulated to a full performance of their functions, it is impossible, in the majority of cases, to permanently relieve the morbid uterine discharge. In nearly every case of this kind we will find the bowels irregular, either constipated, or less frequently a chronic diarrhea, or an alternation between constipation and diarrhea; the secretion of urine will likewise be found altered, generally the urine will be passed in smaller quantities than natural; in some cases it will be found albuminous, and in others it will be normal in quantity, but of low specific gravity. The skin will, in a great majority of cases, either be found harsh and dry, with very little or no perspiration, at any time, or it will have a soft, flabby, and doughy feel; and if there be perspiration, it will generally be cold and clammy. Each of these morbid conditions will have to be removed, and the organs stimulated to a normal performance of their functions. Thus, if the bowels are constipated, as is most frequently the case, the combination referred to under the head of chronic metritis, will, in a majority of cases, remove the difficulty; with the use of any laxative preparation, however, if we expect to succeed in removing the tendency to constipation, we will have to distinctly impress upon the mind of the patient the importance of having a fixed time to evacuate the bowels, and at this time it should be attended to, no matter what circumstances occur that

would make it inconvenient. If this rule be observed, a habit will be formed, and after a short time an action from the bowels will take place at the regular time, without the use of purgatives. To stimulate the kidneys to action, we may use agents that, while they accomplish this purpose, will have a direct beneficial influence on the disease. In some cases we obtain marked benefit from the old-fashioned prescription of *Copaiba* and *Cubeb*, or *Cubeb* with Carbonate of Iron. In others the tincture of the *Muriate of Iron* will be useful, as in the following:—

R Tincture of *Muriate of Iron*, 3ss.

Glycerine, 3iss. M.

One-third of a teaspoonful every two hours. The *Eryngium*, *Hydrangea*, *Staphysagria*, *Phosphorus*, and the tonic and astringent diuretics may also prove useful.

To remove the peculiar morbid condition of the cutaneous surface, and promote free secretion from it, we make use of the alkaline wash, using it once or twice a day, with considerable friction. If the patient be much debilitated, the addition of spirits to the wash will be beneficial. In many cases, especially those in which the skin is harsh and rough, the wet sheet-pack used once or twice a week, will often be followed by a marked improvement, both in the general health and the local disease.

546. Under the general treatment above recommended, a marked improvement will soon be observed; the strength will be increased, the appetite improved, the excretions will be in normal quantity and quality. This of itself will relieve the uterine inflammation in the majority of cases, and stop the leucorrhæal discharge. In some cases the careful selection of special remedies will give better results than we obtain from the general means named, but in others they will supplement them. I have seen cases cured with a single remedy, as the *Graphites*, or *Carbo-veg.*, which had resisted all the means employed for many months. It is true we can not always find the indication for the special remedy, but it is just as true that we can look for it carefully. Read over the remedies named in inflammation of the cervix, and acute and chronic metritis, and if the symptoms indicating them are found here, use them. I have had good results from the

Hamamelis, Viburnum, Maerotys, Caulophyllum, Gossypium, Pul-satilla, Staphysagria, Cuprum, arsenic, etc.

547. As already stated before, our local medication should be first directed to the removal of any inflammation or other disease that may exist, of the cervix uteri, or the vagina. Especially should the condition of the canal of the cervix be ascertained, and if diseased, it should be treated in the manner heretofore described. After the inflammation of the vaginal portion of the uterus has been removed, but little more can be accomplished by topical applications. The use of the cold-water injections, however, should be still continued, as by this means the vagina and cervix will be kept in a healthy condition.

548. Injection into the cavity of the uterus has been recommended and put in practice by some physicians. Dr. Simpson states "that he has, of late, applied nitrate of silver, etc., to the lining membrane of the cavity of the uterus, in cases of uterine leucorrhea, and of dysmenorrhea, connected with a morbidly sensitive state of portions of the inner surface of the organ, as ascertained by the bougie, and with membranous, sub-inflammatory effusions; in chronic suppression of the menstrual discharge, etc. The results proved, that while *direct* local applications could thus be made, with perfect ease and safety, to the diseased lining membrane of the uterine cavity, the effects were such as to lead to the hope of a successful issue in some cases of uterine disease, otherwise almost or indeed totally unmanageable." In applying these agents to the uterine cavity, Dr. Simpson uses an instrument similar to Lallemand's porte-caustic. In this treatment of Dr. Simpson's, Dr. Bennet partially coincides. After recommending it as a last resort in severe cases of internal metritis, he says: "The cavity of the uterus bears surgical interference, as we have seen, less than any other uterine region; its cauterization being nearly always attended with extreme pain, nausea, or even sickness, copious hemorrhage, and considerable febrile reaction." Dr. Ashwell describes a case of inveterate leucorrhea, in which he used an injection of Sulphate of Zinc, gr. iij. to Warm Water ʒi. There were no immediate effects, but in about six or seven hours there was agonizing pain

in the uterine region, and internally, tenderness on pressure nearly over the whole abdomen, but especially at its lower part; a quick, hard pulse; and, in fact, all the symptoms of metritis. These symptoms were subdued; the discharge appeared to be entirely arrested, but it again returned in a few weeks. In another case he merely used the injection of warm water; it produced the same symptoms of uterine inflammation, though not so severe. The patient had no return of the disease. In two cases, reported by Dr. Balbirnie, in Mr. Tealier's practice, injections of Wood Soot, a handful to a pint of Water, were used at intervals, in one case, for fifteen days, in the other for three weeks; these injections were not followed by any inflammatory symptoms, and the patients were entirely relieved.

549. In some cases of this disease the use of the irritating plaster will be attended with much benefit. If there is tenderness on pressure over the lumbar or sacral regions of the spinal cord, it should always be used until this is removed, providing there is nothing to contra-indicate its use; and if there be continued pain and tenderness in the hypogastric region, it should be used there in the same manner.

PHYSOMETRA, OR TYMPANITIS UTERI.

550. This is a very rare disease, and in its description I will have to depend entirely upon continental authorities, as I have never seen a case of the kind, nor has there been a case reported in the journals that I am aware of. The disease consists in an accumulation of gas in the uterine cavity, which is supposed to arise from chemical or putrefactive changes in some substance retained within the uterus. Dr. Gooch describes two forms of this disease: in one the air is formed in the cavity of the uterus, is retained for several months, distends it to a considerable magnitude, and is then expelled; of this kind he had never seen an instance. In the other form, the air is formed in the organ, but, instead of being retained, so as to distend the uterus, it is expelled with a noise many times a day. To prove that this escape of gas was from the uterus, he reports the following case: the patient was subject to this infirmity only when not pregnant,

but she was a healthy and breeding woman, and the instant she became pregnant, her troublesome malady ceased. She continued entirely free from it during her whole pregnancy: but a few weeks after her delivery it returned.

551. Boivin and Duges state that they have never known the existence of an *aëriform body* in the uterus, except in obstetric cases, as in retention of the membranes, or of portions of the dead fœtus, or of putrid coagula, causing gaseous exhalations, found in the uterus after death, or escaping, *per vaginam*, during life. In such cases, the uterus may project, more or less, into the hypogastric region, and into the vagina, being resonant on percussion, and constituting a tumor circumscribed and proportionate to the quantity of gas it contains,—this quantity varying, especially with the degree of inertia of the uterus.

552. Other cases have been reported in which the accumulation of gas in the uterine cavity appeared to be the result of a morbid exhalation, or secretion, and not by chemical changes. A case of this kind came under the observation of Mr. John Hunter, which he endeavored to elucidate, but failed; on examination after death he could not discover any disease, either of the uterus or vagina.

553. There is no doubt, however, that physometra, in the majority of cases, is the result of a chemical decomposition of some substance retained within the cavity of the uterus. Thus it may arise after labor from retention of the membranes, or a portion of the placenta, or of a dead fœtus, or in some rare cases, of a retention of the lochial discharge. At other times it may arise from decomposition of retained secretions, as of the uterine mucus, coagula resulting from menorrhagia, or even of the catamenia; or of the chemical decomposition of a polypus, moles hydatids, etc. Boivin and Duges report three cases illustrative of the origin of this disease. In the first case the catamenia were checked by exposure to cold, followed by pains and swelling of the uterus, which extended to the umbilicus, and was resonant on percussion, with remittent fever. The finger was carried as far as the *os uteri*, upon which a portion of fetid gas immediately escaped; the abdomen collapsed, but soon became distended

anew: a tube was introduced into the uterus, in order to apply fumigations, gas issued copiously, coagula followed, and the patient was cured. In the other two cases, who had been affected a long time with pains in the uterus, and fetid, aëriform exhalations, the uterus was found to be filled with putrid effluvia: its interior surface was ulcerated, and the os uteri closed by the swelling of its borders.

554. *Symptoms.*—According to M. Colombat, the symptoms of physometra consist in a feeling of uneasiness and tension in the hypogastric region; the woman complains of a pain, beginning in the womb, and running off towards the groins, loins, thighs, and, in some instances, even to the diaphragm. In most cases the menses are suppressed, yet there are some women who continue to have them regularly. The abdomen, which enlarges, presents a uniform, circumscribed tumor, tense, and resounding upon percussion like a drum. The womb, which gradually rises above the pubis, tends towards the umbilicus, and may even reach above it, but does not increase in weight, though having acquired, as in many instances, considerable magnitude. This evolution is sometimes accompanied with thirst, anorexia, rigors, and slight fever, increasing generally towards evening; the excretions of stool and urine are more or less disordered; the patient has some respiratory uneasiness, becomes inactive, dislikes to move, and it is, indeed, not uncommon for the uterine distention to excite sympathetic action of the breasts, and even secrete a sort of milky fluid.

555. In this state of things, the expulsion of a portion of gas from the vulva gives relief, and, generally speaking, an abundant discharge of it, which is commonly accompanied with noise, dissipates all the symptoms of the malady. This sort of uterine eructation may happen at very various periods; it is rare, however, for the gas to be retained within the womb beyond five or six months. Under such circumstances, the menses not returning, the woman is apt to suppose herself pregnant, and the more so, as the feelings she experiences resemble those occurring in pregnancy.

556. *Diagnosis.*—This disease may be readily distinguished from pregnancy by the resonance of the tumor, by the lightness

of the uterus when it is elevated upon the finger, and by the absence of fetal movement, and the evidence furnished by ballottement, auscultation, etc. From all other diseases of the uterus by the resonance of the tumor, which may be ascertained to be the uterus by the vaginal and hypogastric touch, and by the lightness of the uterus.

557. *Treatment.*—The first object of the practitioner in this disease is to remove the accumulation of gas in the uterine cavity. For this purpose a small cannula may be introduced into the cavity of the uterus, in the same manner that we introduce the uterine sound; as soon as the cannula is introduced, the gas will escape, and the abdomen rapidly collapse. (See report of a case by Prof. Bedford, Clinical Lectures, p. 322.) After the evacuation of the gas, such measures should be employed as will remove the producing cause, the putrefactive substance in the uterine cavity. For this purpose we may use injections of warm water into the uterine cavity, and if no symptoms of inflammation arise from it, we may add to the injection the *Liquor Soda Chlorinata*, gradually increasing the strength of the injection. This injection might be replaced by an injection of an infusion of the *Baptisia Tinctoria*, or a very weak solution of the *Pyroligneous Acid*.

558. The internal treatment should be directed to the restoration of the general health, and to stimulate the excretory organs to throw off any morbid material that may have been absorbed into the system.

HYDROMETRA—UTERINE DROPSY.

559. This is also a very rare disease, and, consequently, its pathology is not well known. It consists of an accumulation of fluid within the cavity of the uterus, which is retained, either from inertia, or from some morbid change in the structure of the organ. This accumulation may consist of a serous fluid, of mucus, pus, or of a dark, sero-sanguineolent fluid.

560. Frank describes four varieties of this disease. 1. The cellular, when the effusion is immediately underneath the mucous membrane of the uterus. 2. The independent, the fluid being

in the uterine cavity. 3. The hydatic. 4. Hydro-physometra, where both fluid and air are contained within the womb.

561. We have already seen that internal metritis, or uterine catarrh sometimes gives rise to this disease, by causing an abnormal contraction of the os internum of the cervix, and the consequent accumulation of the secretion of the inflamed mucous membrane of the uterine cavity. As the retained secretion increases in quantity, the uterus becomes dilated, and its mucous membrane changes its character to a thin, serous membrane, secreting a colorless, serous, albuminous fluid, resembling synovia. In this case, the increase in the size of the uterus is mostly at the expense of the thickness of its walls, the uterus becoming a slightly thickened hydropic capsule; or the uterine tissue may preserve its normal character, the evolution taking place in the same manner that it does in pregnancy, the contained fluid being hemorrhagic in character, or consisting of a purulent or mucopurulent secretion. Boivin and Duges state that they have observed it in a case of cancer of the uterus; it would recur for a short time, and then disappear by copious evacuations. They have, also, seen it follow chronic metritis, presenting, on examination after death, the cavity of the uterus filled with a large quantity of pus, and the os uteri obliterated by adhesions. The sero-mucous fluid secreted by the mucous membrane of the uterus is almost always mixed with blood or pus. The uterus is seldom found merely thinned and distended in these cases; the tissue is most commonly beset with scirrhus, ulcerations, hydatids, or polypi; and the os uteri is sometimes obstructed by a tumor, sometimes merely closed by tumefaction.

562. *Causes.*—Inflammation of the uterus may be said to be the most frequent cause, though it has been attributed, by some authors, to constitutional debility.

563. *Symptoms.*—According to M. Colombat, the size of the abdomen increases, with more or less rapidity, and the swelling, which commences in the middle of the hypogastrium, gradually extends from below upward. During the first months, the woman supposes herself pregnant; the breasts either lessen or increase in size; the countenance, which is bloated and pale, bears the

impress of languor; she has a feeling of weight in the pelvis, pains in the loins, dragging sensations in the groins, and sometimes a slight degree of fever. By palpation, we discover a rounded and firm tumor in the hypogastrium, which appears to come up from the pelvis, to a certain height, greater or less. The position of this tumor is very little changed by the changes of the woman's position, and we find a deep-seated, obscure, circumscribed, fluctuation in it. But the least equivocal sign is that ascertained by touching; in fact, by introducing a finger into the vagina as far as the cervix uteri, and then pressing the tumor with the other hand, we readily feel the shock of a fluid, and a very distinct fluctuation. This is not a symptom of ascites, nor of dropsy of the ovaria or tubes, for, in those affections, the cavity of the uterus is not distended with fluid, but the organ is itself jammed down toward the bottom of the pelvis, without any increase of size.

564. The menses are nearly always suppressed, though, according to some authors, there are some exceptions. If the disease continues for any length of time, the general health will suffer more or less, the appetite will become impaired, and symptoms of dyspepsia manifest themselves. In the later stages of the disease, the pulse will be found small and quick, the skin dry and harsh, the bowels irregular, and the urine passed in small quantities, and depositing a brick-dust sediment. According to Dr. Churchill, the patient may die from exhaustion, in consequence of the secondary fever; or the womb, unable to dilate more, or weakness in some part by previous or present disease, may give way, and the contents escaping into the peritoneal cavity, fatal peritonitis may result immediately. This is the usual consequence of obliteration of the canal of the cervix in old women.

565. *Diagnosis.*—Owing to the cessation of the menses, and the subsequent enlargement of the abdomen, hydrometra will be more liable to be mistaken for pregnancy than anything else. We may easily distinguish it from pregnancy, however, by the absence of the signs furnished by ballottement, by the stethoscope, and especially by the absence of the foetal movement.

566. It may be distinguished from physometra by the dull

sound on percussion, and by the increased weight of the uterus. From ascites and ovarian disease by the results of the hypogastric and vaginal touch. By this means we may ascertain the exact extent of the enlargement, and that it is due to an increase in the size of the uterus. From tumors of the uterus by the fluctuation and softness of the enlargement.

567. *Treatment.*—Our first object when called to a case of this kind, is clearly to evacuate the contents of the uterus. To effect this, it has been recommended to use errhines to produce severe sneezing, or emetics to produce vomiting, thereby causing a severe and sudden contraction of the abdominal muscles; the object proposed to be accomplished by this means, is to give a sudden shock to the system, and cause severe compression of the uterine tumor, by which its contents may be expelled. This may be first tried, though it has rarely proved successful. The easiest and quickest method of evacuating the contents, is by the introduction of a small cannula or catheter, which should be allowed to remain until all the fluid is evacuated. If there exists an unnatural degree of contraction which prevents the passage of the canula, but the canal of the cervix is still pervious, we may dilate it sufficiently by the use of the sponge-tents heretofore described, to admit the passage of a tube of sufficient size.

568. Should the canal of the cervix be impervious, we have no other means of relieving the patient but by puncturing it, and thus evacuating the fluid. Where we have to resort to this measure, the puncture should be made, if possible, in the course of the canal of the cervix; a common trocar will be found as good an instrument as can be employed in this case, leaving the cannula in the puncture until the fluid is evacuated. The artificial opening made should be kept pervious, by the occasional passage of a bougie. The danger to be apprehended from this operation, is subsequent metritis; this should be watched for, and on its first appearance, subdued by appropriate treatment.

569. The uterus has been punctured in other places than through the cervix. Thus, Francis Wirer performed the operation successfully, by passing the trocar an inch and a half above the pubis, and at the same distance from the linea alba. Fifty-

three pounds of a thick, blackish, bloody liquid escaped through the canula; steady pressure was afterward kept up with Munro's bandage and several napkins; the patient, who was fifty years of age, was completely cured; for ten months after the operation there was no return. The puncture has also been performed through the uterine wall from the vagina; there could be no object in this, however, without there was displacement of the uterus, the cervix being carried out of reach, and could not be brought down.

570. As soon as the uterus has been evacuated, a bandage should be placed around the abdomen, with a compress over the uterus; it might be well too, to use an injection into the uterine cavity, as was spoken of under the head of physometra; this, however, would depend upon the condition of the patient, and the character of the fluid evacuated. At any rate, the vagina should be frequently washed out with injections of water, and the canal of the cervix kept open by occasionally passing a bougie. As the disease most frequently arises from metritis, the same treatment should be pursued that has been recommended for that affection.

MOLES—HYDATIDS.

571. Under this head, we have to consider a morbid mass in the cavity of the uterus, arising from a blighted or false conception. The term mole, or spurious mole, has also been applied to almost any foreign body existing in the cavity of the uterus, as the remains of the placenta after delivery, to the tough tenacious coagula, which is sometimes formed from the catamenia, or in menstruation, etc.

572. Boivin and Duges admit of three kinds of mole: 1. Blighted conception, or the false germ. 2. The fleshy mole. 3. The hydatid mole. Within these limits, they will always be a faulty product of conception, and their origin, necessarily, a consequence of impregnation.

573. I. *Blighted, or False Conception*, according to Dr. Churchill, is not intended (as has been supposed) to signify any imperfection in the act of generation, but merely that the vitality of the fetus having been destroyed, the object of utero-gestation

has failed. In most of these blighted ova, the foetus is altogether wanting, having been dissolved in the liquor amnii; we may, however, generally discern the remains of the umbilical cord attached to some part of the inner surface. In addition, the membranes (chorion and amnion,) may be traced with the placental development on some portion of the periphery of the ovum. Still, the whole mass will be found a good deal changed in size, form and structure, by the effusion of blood, and the formation of coagula between the membranes, or in the placenta, by decomposition of lymph, and sometimes by apparently quite new and perfect layers of membrane. It is these very changes which probably caused the death of the foetus. We can easily comprehend how very frail the tenure of life must be at an early period; we see it broken by mental or bodily shocks; by vascular or nervous irregularity; and by any deviation from normal structure, such, for instance, as a tumor at the root of the cord, or the cord being inserted where the floeculi of the chorion are deficient, or into a part where the placenta is not. In this state, it is seldom retained for more than two or three months, but, if not expelled, it may degenerate into a fleshy mole. It is not easy to distinguish a blighted ovum which has been retained in the womb, from a recent abortion, as in the latter, the foetus may be wanting."

574. II. The *fleshy mole* is considered by most authors to arise from a false conception, the ovum remaining attached to the uterus, and receiving and appropriating the blood destined for the foetus, it increases in size and density. Two forms of the fleshy mole is described; in one they are hollow, possessing a distinct lining membrane, in which are the remains of the liquor amnii. The other forms a solid fleshy mass.

575. According to Boivin and Duges, the cavity of the fleshy mole is always inconsiderable in proportion to the substance of its parieties. The fleshy substance is of unequal thickness, of a red color, compact, fungous, resembling the placenta in tissue, though more elastic, and less filamentous. They constitute a mass of somewhat rounded or oval form, uneven, and of a volume varying from that of a large egg to that of the head of an infant. In some instances, portions of a foetus have been found either in

the cavity, or imbedded in the substance of its walls. The solid fleshy mole presents the same character as the other; it has no central cavity, and is generally larger and more misshapen.

576. There is generally but one mole present in the uterus; it may, however, be present with a healthy ovum, for it is said to be very uncommon for both the products of conception in a twin pregnancy to be affected at the same time, and for two moles to be formed in the uterus at the same time. On the contrary, a mole has often been found to exist with a living foetus, the mother going her natural time, the mole being expelled immediately, or in two or three days after the birth of the child. The existence of a mole in twin pregnancy has often been followed by abortion, the foetus and mole being expelled together; or what is still more rare, the mole has been expelled some time during pregnancy, the woman reaching her full term, and giving birth to a healthy child.

577. III. *Hydatids, or Vesicular Moles.*—This degeneration of the ovum has been more closely observed, and its pathology is therefore better known. A probably not unfrequent cause of abortion is a degeneration of the villi of the chorion into pedunculated vesicles or cysts: the formation of these cysts in the villi lead to the wasting of the parts around it, and the consequent destruction of the ovum. These cysts are found not only on the surface of the chorion, but the same degeneration also takes place in the placenta. Mr. Paget has well described these formations; he says: “A part, or even the whole of the chorion, is covered with pellucid vesicles with limpid contents, borne on long, slender, and often branching pedicles. The cysts are usually oval or pyriform; their walls are clear, or have minute or opaque dots; they may be simple, or may bear others projecting from their walls.” The whole process of their formation may probably be thus described: “Certain of the cells in the proper villi of the chorion, deviating in their cell-form, and increasing disproportionately in size, form cysts, which remain connected by the gradually elongated and hypertrophied tissue of the villi. On the outer surface of the new-formed cysts, each of which would, as it were, repeat the chorion, and surpass its powers, a new

vegetation of villi sprouts out of the same structure as the proper villi of the chorion. In these begins again a similar development of cysts, and so on *ad infinitum*. Each cyst, as it enlarges, seems to lead to the wasting away of the cells around it; and then, moving away from the villus in which it was formed, it draws out the base of the villus, which strengthens itself, and forms the pedicle on which the cyst remains suspended."

578. Boivin and Duges describe three forms of this hydatid or vesicular mole. 1. The vesicular mole containing the embryo. 2. The hollow vesicular mole. And, 3. The clustered vesicular mole. The entire three varieties, however, have the same formation, and the difference is not sufficient to justify a separate description.

579. The quantity of these cysts contained in the uterus varies very much. When their formation commences it generally continues until the ovum is expelled, so that, if it is retained in the uterus a considerable length of time, the quantity might be very large. The cysts vary in size from a pin's-head to a grape; they may be found singly or in groups, in this latter case resembling a bunch of grapes; their form is generally oval, though they may be elongated or round; the contained fluid is generally transparent and clear, though in the larger ones it is often of a straw-color; both white and red vessels may be seen running on their surface.

580. *Symptoms.*—The symptoms for the first three or four months are the same as in pregnancy, suppression of the menses, swelling of the breasts, morning sickness, etc. It is only about the period when the foetal movements should take place that doubt arises. At this time, the abdomen is frequently much larger than it should be in natural pregnancy, and the constitutional suffering much greater. In regard to the increased size of the abdomen, when containing a mole, Dr. Ashwell remarks:—"Thus, if half the term has passed, the bulk may equal that of a pregnancy near at its close, and the greater part of this vast increase may have occurred within a few weeks. If a medical opinion is now asked, additional reasons for suspicion will now be discovered. The stethoscope will fail to detect the pulsations of the foetal heart, or

even the placental murmur; there will be no balancing the uterine contents by ballottement. and the uterus, although greatly distended, will be soft and doughy in feel, exceedingly unlike the firm structure of the impregnated organ."

581. Sometimes the presence of moles occasions considerable aggravation of the symptoms of pregnancy; the uterus, larger in size, occasions more uneasiness from its weight, especially if the increase in size has been rapid; the patient suffers more from pains in the loins, from disuria, and from lassitude, than in an ordinary pregnancy; there is often a degree of general illness rare in natural gestation. Sometimes there is a sanguineous discharge for sometime before the mass is expelled.

582. According to M. Colombat, where the mole has attained its maturity, which is generally the case from the fourth to the seventh month, the patient suffers pains like those of real labor; the womb contracts, its orifice becomes dilated, and the mass is expelled. The breasts then fill with milk, the lochia follow in course, and all the other secondary symptoms take place as in a common lying-in. In a majority of cases the expulsion of the mole is followed by considerable flooding, and should its expulsion be difficult from its attachment to the uterus, the hemorrhage may become very alarming.

583. *Diagnosis.*—As this disease simulates pregnancy, we have first to note the differences between the two. In moles we have the absence of ballottement, of quickening, and of the stethoscopic signs, — the beating of the foetal heart, etc.—while there is generally a disproportion between the size of the tumor and the period since it was first observed. It may be distinguished from physometra, by the absence, and the greater weight of the uterus. From hydrometra, by the perceptible fluctuation in the latter, and from the greater accumulation; the diagnosis is, however, very difficult, but it is of little importance from the rare occurrence of hydrometra.

584. *Treatment.*—So long as the uterus does not contract upon its contents, there is nothing to be done, even if we have ascertained the nature of the uterine contents, without there should be flooding. In this case, we should try to arrest it by cold applica-

tions to the vulva, plugging the vagina, and the internal use of the tincture of equal parts of oils of erigeron and cinnamon. If the flooding should not cease, under the use of these measures, we would have to excite contraction of the uterus, if possible, to expel its contents. For this purpose we may administer the **caulophylin** and the **ergot**, and apply a bandage tightly around the abdomen. If the uterus does not expel its contents under the use of these remedies, and the hemorrhage continues, it is advised to introduce the hand into the uterus, where this can be done, and thus remove its contents.

585. The flooding that occurs after the expulsion of the mass should be treated in the same manner as flooding after delivery ; a bandage should be applied, and the patient managed as after ordinary labor, but with special reference to the flooding.

FIBROID TUMORS.

586. Under this head we have to describe all those morbid growths which have a dense, fibrous structure, or which in any manner resemble fibrous tissue, and are not malignant. These growths may all be arranged in two classes, the pediculated and the non-pediculated. The first are called **polypi**; the second are distinguished by the name of **fibrous tumor**. As pathological anatomy furnishes the only basis of a rational system of practice, and as this is the only means by which we can obtain a knowledge of any morbid process, the reader will better understand the nature of these growths, from the following accurate description, from Prof. Rokitansky's *Pathological Anatomy* :

587. "Anomalous fibrous tissue is the most frequent of all new formations occurring in the uterus, in the shape of fibroid or fibrous tumors. These fibroid growths of the uterus not only present all the essential characters peculiar to them elsewhere, in a remarkable degree, but they also offer numerous important and accidental modifications, some of which exert considerable influence upon the uterus. The uterus, as well as the adjoining tissues, are particularly liable to be the seat of fibroid growths. They not only present all the varieties and degrees as regards size and volume, shape, number, and metamorphosis, but they also

offer the most various modifications in reference to their seat, and consequent reflex action upon the womb.

588. "We also find that the changes of position of the uterus, the deviations in its shape, and of the direction and form of its cavity, of its size in reference to the coëxistent hypertrophy and atrophy of the organ, and the relations of the uterine mucous membrane, etc., are very remarkable.

589. "The three varieties distinguishable in the fibroid tumor, according to its internal structure, are all found in the uterus. The variety in which a concentric disposition of the fibers is displayed, is here also distinguished by its density, hardness, poverty of vessels, smallness, and spherical shape.

590. "The second variety, in which the fibers appear irregularly disposed, and issue from numerous centers or nuclei, present a rounded form, and an uneven, nodulated surface, which indicates the aggregation of the fibrous centers; in reference to density and consistency, vascularity and volume, they offer the extensive modifications already spoken of; they may, on the one hand, be very dense, and hard, and unvascular; on the other, in consequence of an accumulation of cellular tissue in the interstices of the fibrous layers, they may be more or less vascular and succulent, or soft and elastic, soft and doughy, flabby, etc., sometimes resembling a soft, mammary gland, sometimes a coarse-grained salivary gland. Those fibroid tumors, the interstices of which are dilated into cells or cavities, containing a serous fluid, from excessive exhalation of the intervening cellular tissue, are of extreme importance. They present fluctuation, and may, on account of the deceptive appearances accompanying fibroid tumors, be easily mistaken for ovarian dropsy, hydrometra, acephalocyst of the uterus, or pregnancy.

591. "The fibrous polypus of the uterus, the third variety of fibroid tumors, takes its origin by a single or divided trunk in the interstitial cellular tissue of the uterine parenchyma; the former expands into striated fasciculi, which are bound together by soft or vascular and cellular interstitial substance, and the entire mass presents a distinctly lobulated structure, which is more or less visible externally. The polypus grows into the cavity of the

uterus, with which it is in the closest anatomical connection, and upon the functions of which it exerts a considerable influence. It enlarges chiefly in one direction, and has a cylindrical, fusiform, clubbed, pyriform shape, and is more or less flattened; it is provided with numerous and very large vessels, is apt to swell, and, in consequence of excessive congestion and rupture of the vessels we often meet with extravasation within its tissues.

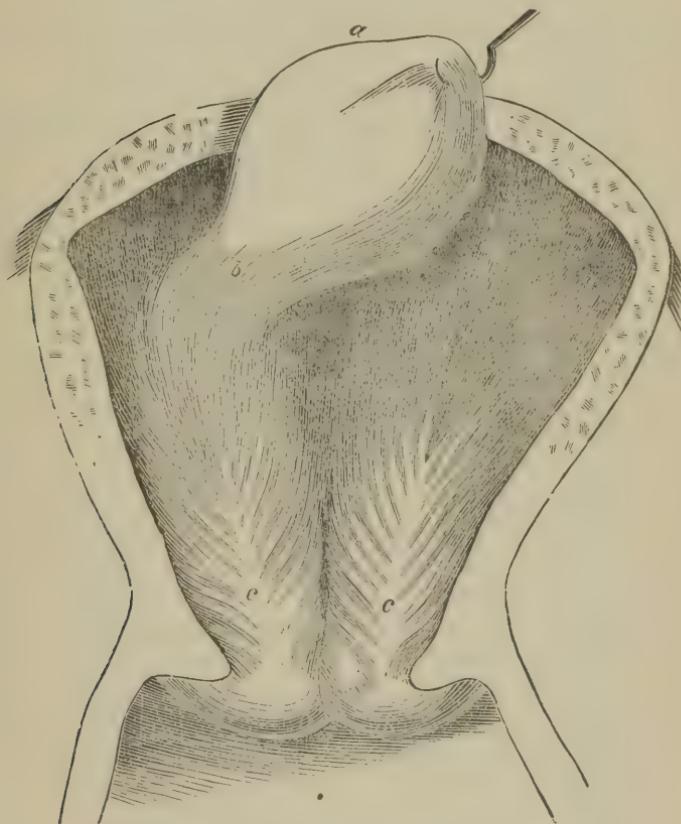


FIG. 27.—INTRA-UTERINE PEDICULATED FIBROID TUMOR,—OR POLYPUS.
a, Polypus drawn up with a tenaculum; b, its pedicle; cc, the cavity of the cervix.

592. “The anatomical relation of fibroid tumors to the uterine parenchyma is very intimate in the third variety, less so in the

second, and least of all in the first, in which the tumors adhere to the uterine parieties by a thin layer of whitish or reddish, more or less vascular, cellular tissue, so that they may be detached without difficulty.

593. "The form of the fibroid tumors of the first and second variety, we have already described as being generally round; in the second variety some alterations may occur, though the globular form still predominates. The peculiarities of shape of the fibrous polypus, or third variety, have already been stated. The greatest variety occurs in reference to size. Fibroid tumors are found from the size of a hemp-seed to that of a man's head.

594. "The fibroid tumors belonging to the second variety attain the largest size, especially when of loose texture, and rich in interstitial cellular tissue; the fibrous polypi also reach a considerable magnitude, but the fibroid tumors of the first variety are the smallest. They are all generally developed slowly, though the second and third variety are occasionally developed with extraordinary rapidity; they are also liable to a temporary increase of size or tumefaction proportionate to their vascularity.

595. "As to their number, we sometimes only find a single, sometimes several or many fibroid tumors in the same uterus. We then observe tumors of the most different sizes coëxisting. This applies chiefly to the first two varieties; the fibrous polypus is often solitary, but it also occurs in company with the others.

596. "The uterine parieties are the seat of the fibroid tumors, but not only do they occur much more frequently in the body than in the cervix, but in the former they chiefly affect the upper portion or fundus. They very rarely occur at the inner orifice, and, if possible, still less frequently in the vaginal portion. This is the case with all fibroid tumors, a fact that forms an interesting contra-distinction to the relation which cancerous disease bears to the inferior segment of the uterus. Fibrous polypus, more especially, is apt to commence at the fundus, and at the orifices of the fallopian tubes. The fibroid tumor is inserted into, and takes its origin from, the middle layers of the uterine substance, or it appears to be more connected with the external layer, or

even to lie under the peritoneum, or again, it lies nearer the inner surface, or immediately under the mucous membrane. The first two varieties are developed in the most various layers, though generally in the external ones; the third forms upon the internal layer exclusively. The former also very frequently present other curious relations, whether they have been developed in the vicinity of the peritoneum, or of the mucous membrane of the uterus. In the first instance the tumor, as it enlarges, gradually becomes detached from the uterus, dragging the peritoneum after it, and thus at last becomes pediculated or pendulous, by a peritoneal cord of various length. In the second instance it pushes the mucous membrane before it, as it enlarges, and at last hangs into the uterus by a mucous pedicle, thus resembling the true fibrous polypus, from which it may be distinguished by its relation to the uterine parenchyma, and by its internal structure.

597. "We must here advert to a circumstance that is not of rare occurrence,—viz.: we sometimes find a fibroid tumor in the pelvic cavity, and generally in Douglas' space, without any further connection with the uterus, except by means of cellular cords, or lamina of new formation, (false membranes), which pass from the tumor to the uterus and its appendages,—to the pelvic walls, the rectum, etc. The question presents itself, which is the original point of development of such fibroid tumors? They are generally tumors which have originally been developed under the uterine peritoneum, and, after having become entangled in a net-work of pseudo-membranous formations, resulting from the peritonitis they have excited, are gradually detached from the uterus. Occasionally, however, they may have been developed within the false membranes themselves, which is the more probable, if we consider that the new tissue, as it proceeds from the uterine peritoneum, participates in the character of the sub-serous, uterine, cellular tissue. Hence, it is extremely likely that we really see very small fibroid tumors occasionally developed in this new tissue.

598. "To these fibroid tumors the loose fibrous concretions, which are sometimes found in the pelvic cavity, are allied; they

must be considered as fibroid tumors of the uterus which have become detached in consequence of atrophy of the peduncle.

599. *“Metamorphoses and Diseases of the Uterine Fibroid Tumors—Spontaneous Cure.”*—We have already spoken of ossification, congestion, inflammation, suppuration, and solution of fibroid tumors generally; and these remarks apply with the more force to uterine fibroid tumors, as we assumed the latter as the foundation upon which we based our observations. Ossification occurs very frequently, congestion less so, and inflammation and its terminations, rarely. A spontaneous cure, under which head we must also class ossification, on account of the destruction of vitality in the tumor, occurs in a few rare cases, by a detachment of the fibroid tumor as it projects into the uterus, or is suspended in it by a mucous pedicle. It is effected in the following manner: The mucous membrane of the uterus covering the apex of the tumor is in a condition of permanent irritation and congestion; this is at last converted into inflammation, and terminates in suppuration and gangrene. The tumor is thus partially exposed toward the uterine cavity, and the destructive process gradually involving its entire cellular investment, it becomes detached, and passes through the opening in the uterine mucous membrane into the uterine cavity. Ancient and modern cases are on record, in which fibroid tumors of various sizes, and ossified tumors, were thus discharged. The powers of nature rarely suffice, if the tumors are of considerable size, as the extensive suppuration necessary for that purpose is likely to prove fatal, both by exhaustion and by the extension of inflammation to neighboring organs. It would appear that the fibrous polypus is occasionally, though very rarely, discharged in a similar manner, in consequence of suppuration occurring at its root and in the surrounding tissues.

600. “The changes in the uterus, consequent upon the presence of one or of several large fibroid tumors, are numerous and important, by reason of the diagnostic characters they afford.

601. “In the first instance, the volume of the uterus increases in proportion to the number and size of the tumors; the fibrous polypus causes an enlargement of the uterine cavity, correspond-

ing to the size of the polypus. The increase in the substance, the hypertrophy of the uterus, which the fibroid growths generally induce, and, on the other hand, the atrophy of the organ, are of greater interest. The hypertrophy appears as a development of the uterine tissue, resembling that occurring in pregnancy; it varies in degree. In reference to the latter subject, the question presents itself, by what means the different degrees of hypertrophy are determined, and on account of the occasional passive condition and the occasional atrophy of the uterus, it is necessary still further to generalize, and to ask, how it happens that under some circumstances the uterus becomes hypertrophied, in others, remains unchanged, and in others, again, becomes atrophied? In answer, we offer the following remarks:

602. "1. The nearer the fibroid growths approach to the uterine mucous membrane, and project into the cavity of the uterus, and thus maintain the mucous membrane in a state of irritation and inflammation, the more palpable is the hypertrophy of the uterus. It is most fully developed, so as to resemble pregnancy, in the case of the fibrous polypus.

"2. Hypertrophy of the uterus appears to be encouraged by a vascular state of the tumor, by the latter being less dense and capable of rapid growth.

"3. As also by the development of the tumor, during or shortly after the period of conceptivity.

"4. The size of the tumor exerts no direct influence upon the origin of hypertrophy or atrophy.

"5. Atrophy undoubtedly results very rarely from fibroid tumors, nor must we forget that they are not unfrequently developed in the uterus during the period of decrepitude, and that they increase very slowly on account of the universal state of marasmus. In this case the atrophy of the uterus is entirely independent of, and antecedent to the fibroid tumors. The atrophy of the cervix accompanying large fibroid growths, is, as we shall have occasion to explain more fully, the result of mechanical traction.

603. "An important change takes place in the position of the uterus, which may be discovered by external examination. Not

only does a large fibroid tumor that occupies the external layer of the uterine tissue, push the organ to the opposite side of the pelvis, but we also notice a remarkable ascent of the organ. The more numerous and the larger the tumors are, and the more they consequently rise out of the pelvis, as it interferes with their growth, the more they drag the uterus after them; its vertical position being also changed in proportion as the fibroid tumors preponderate on one side or the other. This traction necessarily causes an elevation and elongation of the cervix.

604. "The external surface of the uterus is, as may be readily understood, variously disfigured by the projecting tumors. In the same manner the cavity of the uterus, in addition to a corresponding elongation, undergoes various alterations in form and direction, proportionate to the number and size of the tumors which project internally. In reference to the displacement, we sometimes find the entire cavity forced out of the mesial line; at others, it presents more or less angular deflections. The most important disfigurement is effected by the upward traction exerted by numerous and large fibroids. The uterus, and particularly the cervix, is elongated to a degree proportioned to the degree of traction; it becomes thinner, and the attenuation may, in rare cases, even cause a gradual solution of continuity, one portion remaining attached to the vagina, another following the upward direction of the uterus, and the connection being maintained by a mere band of cellulo-fibrous tissue. The channel of the cervix, at the same time, contracts, and may even become entirely obliterated. The vaginal portion gradually disappears, the vagina itself becomes smooth and narrower in consequence of the elongation, and its arch is converted into a funnel, the apex of which terminates in the *os uteri*.

605. "If one or more fibroid growths occupy a lateral portion of the uterine parieties, and especially if they be seated in the vicinity of the fallopian tubes, the external form of the uterus may be rendered oblique; if, under these circumstances, the tumors enlarge, and consequently exert lateral traction, this may be recognized by the elevation of the corresponding side of the *os tincæ*, and the increased distention of the vagina.

606. "Fibrous polypus gives rise to a dilatation of the uterine cavity, and of the cervix, corresponding to the size of the morbid growth; if the enlargement proceeds to a greater extent, the external orifice becomes dilated, and the tumor projects through it into the vagina. Large and heavy morbid masses of this description frequently cause a slight descent of that portion of the uterus into which they are inserted, by the traction which they exert, and sometimes even induce complete inversion of the womb.

607. "The mucous membrane of the uterus is more liable to catarrh and blennorrhea, the nearer the fibroid tumor approaches to it; sometimes it becomes hyperæmic, and blood is effused upon it. This is particularly the case with the fibrous polypus, which is not only accompanied by the ordinary hemorrhage from the capillaries of the mucous membrane, but also from the larger vessels of the uterus, or sinuses of the morbid growth that have given way to excessive traction.

608. "Fibroid tumors of the uterus scarcely ever occur before the twentieth year; a fact which is established by the numerous observations made by ourselves and other anatomists. They are even unusual up to the thirtieth, and present themselves most frequently shortly after the fortieth year. Without entering into an analysis of the almost innumerable cases that we ourselves have met with, we may mention the results of Bayle's calculations as to the frequency of their occurrence. He states that of one hundred females that die after the thirty-fifth year of life, twenty, at least, are affected with fibroid tumors.

609. "They are found in complication with the most various morbid growths of the uterus and its appendages; but especially with cancer of the cervix, with the corroding ulcer of the os uteri, with ovarian dropsy, etc.; still, on the whole, the complication with cancer is not frequent.

610. "The powers of conception are commonly not impaired by the presence of fibroid tumors, and if these are small, and do not occupy an unusual position, they have not necessarily an injurious influence upon pregnancy and parturition, though they frequently cause abortion and hemorrhage after birth. Parturi-

tion may be very much impeded, if they occupy the cervix uteri. It is important to know that these tumors become more vascular, succulent, and softened, during pregnancy, and assume a bluish-red color, so that their original appearance is entirely changed. As the uterus returns to its normal shape, the morbid growth also resumes its ordinary characters. Pregnancy is even said to give rise to hemorrhage and inflammation in the tissue of the fibroid tumor.

611. "An unusual though very important occurrence, brought on by the excessive expansion and traction exerted by large fibroid tumors, is the laceration of the vessels, and especially of the veins. We have once observed the rupture of a vesical vein, (with that of the mucous membrane,) followed by hemorrhage into the bladder, and in another case, the rupture of the sub-peritoneal vein of a fibroid tumor, with hemorrhage into the abdominal cavity, as described by other writers."

612. *Symptoms of non-pediculated Fibroid Tumors.*—While these tumors remain small, there are no symptoms present to mark the presence of the disease; even when the tumors are of considerable size, the patients seldom complain. The symptoms that arise from the presence of these tumors are principally referable to the consequent displacement of the uterus, to pressure on some adjacent organ, and to the increased weight of the pelvic contents.

613. The symptoms arising from displacement of the uterus, vary according to the location of the tumor. Thus, if it is formed in the anterior wall, beneath the peritoneum, the uterus is thrown backward against the rectum, and we have all the symptoms of retroversion of the womb; if in the posterior wall we have anteversion with the symptoms of vesical irritation consequent upon the pressure of the uterus upon the bladder.

614. The symptoms arising from pressure, either of the tumor or of the enlarged uterus, are not well marked, only when this pressure is against the rectum behind, or the bladder in front. When the pressure is against the rectum, there will usually be obstinate constipation, a sense of weight and closure in that part, there will be much difficulty in passing the faeces, and there will

generally be tenesmus and a constant desire to evacuate the bowels. If the pressure be anteriorly against the bladder, there will be vesical irritation, a constant desire to micturate, pains along the course of the urethra, etc.; or there may be retention of urine, or the irritation may extend to the mucous membrane of the bladder, causing an increased secretion of mucus.

615. When the tumors are of considerable size, there is nearly always a sense of weight in the pelvis, of bearing down, and aching in the loins and small of the back. Sometimes when the tumor presses upon the pelvic nerves, cramps of the thighs or legs may occur, or they may be painful, or in rare cases, it might give rise to partial paralysis; if the pressure is against the veins coming from the lower extremities, they may become oedematous.

616. Where the tumor is situated on the internal surface of the uterus, especially if it projects into its cavity, it may give rise to hemorrhage. Hemorrhages rarely occur, so long as the tumor is not pediculated.

617. These tumors sometimes interfere with the menstrual function; thus, cases have been reported, in which the intervals were shortened, the menses appearing every two or three weeks; others again, where the intervals were lengthened, or where the time was irregular; others again, where the duration and quantity of the discharge was lessened; but more numerous ones, where both the duration and the quantity were increased. Many cases have been reported, where the catamenia were entirely suppressed. Again, we have reports of cases, where the catamenia were retained from obstruction of the cervix, caused by the enlargement of the tumor.

618. If inflammation should arise either within the tumor, or in the uterus in consequence of it, the entire symptoms of metritis will be present, as tenderness on pressure over the region of the tumor, more or less fever, gastric and intestinal irritation, etc.

619. Conception may, and does frequently take place in these cases; utero-gestation may go on to full term, or abortion may take place at the third or fourth month. No definite rule can be laid down in these cases; even authors who have closely observed

them, differ widely; some describing these growths as a frequent cause of abortion; while others contend that they are not a necessary cause of abortion, and that pregnancy may, and frequently does, go on to full term.

620. Fibroid tumors of the uterus may be a cause of difficult labor, and may even cause serious results. Thus Boivin and Duges relate a case, in which the patient died after delivery, of peritonitis, and presented, at the parieties of the cervix uteri, a fibrous tumor as large as the fist; the labor had been protracted and very painful; the head of the child could only pass by becoming crushed against the parieties of the pelvis. Another case is related, in which the tumor was formed in the cervix; it prevented delivery for thirteen days; and another, in which rupture of the uterus and death, were occasioned by a similar obstacle.

621. These tumors may be a cause of danger after delivery, the presence of the tumor preventing that contraction of the uterus necessary to close the orifices of the uterine vessels, the patients suffering from profuse hemorrhage. Two cases of this kind, are related by the same authors. In the first, the patient died from hemorrhage, the autopsy revealed the presence of a fibrous tumor in the posterior parieties of the organ, which prevented its contracting after delivery. The second case likewise perished from hemorrhage; three fibrous tumors were found in the body of the uterus, the largest of which, was ten inches in breadth in one direction, and five in the other.

622. *Diagnosis.*—The diagnosis of these tumors will have to be effected by a careful examination of the uterine organs. Thus, if the enlargement can be felt through the abdominal parieties, we may gain some information from its hardness; by introducing a finger into the vagina, and elevating the uterus upon it, we may ascertain whether or not it is connected with this organ. The most reliable information, however, may be gained by the use of the uterine sound. Thus, if it passes into the cavity of the uterus only two inches and a half, we have ascertained that the cavity of the uterus is not enlarged, if the tumor project into the cavity it may be detected by the sound; by grasping the

tumor with one hand and moving the uterus away from it, we may ascertain whether or not it is connected with that organ, etc. (See Uterine Sound.)

623. From congestion and induration of the uterus, by their insensibility on pressure, and by their being well defined and hard, while the uterus, in a state of congestion, is very sensitive, and the enlargement is diffused. From scirrhus or carcinoma, by the absence of the pain, hemorrhage, fetid discharge, etc., which characterize malignant disease, and by the better defined character of the fibroid tumor, and generally by its greater volume.

624. From polypus uteri, Dr. Churchill states, that there will be little or no difficulty in distinguishing these two diseases, if the fibrous tumor be situated in the parieties of the upper part of the uterus, by its defined shape and prominence; but when it is near the cervix, it may easily be mistaken for a polypus not yet expelled, especially if there be hemorrhage; because, if a polypus be inclosed in the body of the uterus, all the signs of fibrous tumor will be present, with hemorrhages, but no special indication of polypus. In process of time, however, the polypus will be forced through the os uteri, and its progress indicated by the descent of the tumor, and the gradual obliteration of the cervix uteri. It should, also, be remembered that a fibrous tumor, at this part especially, is convertible (by a gradual progress) into a polypus. If the finger can be introduced through the os uteri, we may, perhaps, be able to discover the character of the tumor; and the absence of expulsive efforts after the disease has lasted some time, will be additional evidence in favor of its being the disease under consideration; but it must be confessed that the diagnosis is not always an easy one.

625. *Treatment.*—We have here a disease that admits of but very little treatment. So long as it does not interfere with the patient's health, no treatment is necessary; should it, however, create any disturbance of the general health, or of the functions of neighboring organs, these will have to be treated on general principles.

626. This does not seem like a very satisfactory treatment for such a common disease, but can we do more? Dr. Simpson states

that, under the use of the Bromide of Potassium, he has seen these tumors decrease much in size. In one patient the uterine fibroid tumor was of large size, and incommoded the patient much from its weight and pressure. Under the use of the Bromide of Potassium and local leeching, continued in perseveringly for many long months, the tumor involved and decreased in a most marked manner, and her health and power of walking and exertion became quite restored. He says, "I have found the same remedy succeed in several similar cases, in arresting, and, more or less, reducing uterine fibroids, and again, in others, I have seen it fail. But to most persons, the Bromide of Potassium can be given for a great length of time without any interference with the general health. In fact, it usually serves apparently as a tonic as well as a deobstruent, in this respect having a marked advantage over Iodide of Potassium." Dr. Ashwell thinks that the use of Iodine has been attended with benefit in his practice. He administers the Iodine internally, and uses an ointment composed of

R Iodine, gr. v.
Iodide of Potassium, 3*i*.
Adeps Preparata, 3*j*.

M. Ft. Unguentum. This is applied to the cervix uteri.

627. He draws the following inferences from the use of this medicine:—*First*, its internal administration, and its use by inunction, are decidedly beneficial; the advantage, if the remedy be judiciously employed, being rarely attended with constitutional injury. *Secondly*, in hard tumors of the walls or cavity of the uterus, resolution or disappearance is scarcely to be expected, since the growths are adventitious or parasite, and not imbedded in glandular structure. Hence, the prevention of further deposit, in other words, the restraint of the lesion within its present limits, and the improvement of the general health, will be the extent of the benefit derived.

628. Prof. Howe has employed injections into the structure of uterine fibroids with great success. He uses a large hypodermic syringe made for the purpose, and injects from one to two drachms

of tincture of Iodine, repeating it every week. The object is to reach and destroy the center of growth, and experience proves that this can be done with safety.

629. If the tumor lies next to the mucous membrane of the uterus, and especially if it projects into its cavity, and hemorrhage, or any other dangerous symptom should present, it has been recommended by Lisfranc and other French authorities, to enucleate and remove the tumor. This they propose to accomplish by dividing the mucous membrane over the tumor with a scalpel or the finger-nail, and then separating it from the uterus by the finger. Dr. Simpson reports a case of a large fibrous tumor, weighing three pounds, eight ounces, imbedded in the posterior wall of the uterus, and protruding downward upon the top of the vagina. He made an opening, by means of caustic-potash, into the most prominent part of the tumor; through this opening he could pass his finger entirely around the tumor, between it and its uterine envelop. On the second day after the caustic was applied, the artificial opening was considerably dilated; on the fifth, a portion of the tumor was expelled under the influence of ergot. On the twelfth day, while she was under the influence of chloroform, he passed his hand up by the side of the tumor, completed the separation of the remaining adhesion, like an adherent placenta, and brought away the tumor in one mass.

630. In those cases in which the tumor has separated itself from the uterine wall, being merely attached by a pedicle formed of the uterine mucous membrane, the treatment will be the same as for fibrous polypi.

631. *Symptoms of Pediculated Fibroid Tumors—Polypi.*—In an early stage of the growth of these tumors, the symptoms are very obscure, but when more advanced they assume a formidable and dangerous character. In many instances, the first symptoms that will be noticed are similar to those of the fibrous tumor, such as a feeling of weight in the pelvis, bearing down, pain in the loins, etc., which are especially aggravated during the menstrual periods. The menstrual function is usually first affected; it becomes more profuse and protracted, and occurs at irregular

intervals. At the commencement of the growth there is usually more or less leucorrhœa; sometimes the discharge is principally the normal mucus of the parts, at others it is fetid and bloody. These symptoms may continue for a longer or shorter time, owing to the growth of the polypus, and constitutional peculiarities of the patient.

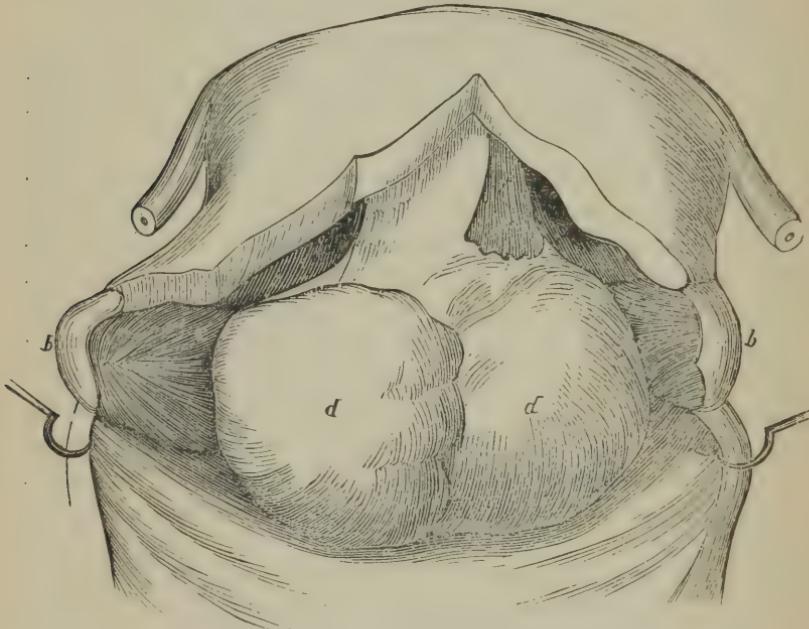


FIG. 28.—PEDICULATED POLYPUS ARISING FROM THE FUNDUS OF THE UTERUS
 bb, Section of the Cervix Uteri, to show the form and attachment of the Polypus;
 dd, The club-shaped Extremity of the Tumor.

632. As the growth advances in size, and in many cases where it is still very small, the hemorrhages become more frequent, and increased in quantity. This loss of blood is sometimes so profuse, as to give the patient a blanched and bloodless appearance, and to greatly impair the general health. The appetite becomes impaired, the bowels relaxed, œdema of the extremities occurs, etc., marking an extreme state of debility from loss of blood. Another prominent symptom in polypus of the uterus is nausea

and frequent vomiting; this is probably caused, in part, by the loss of blood, and partly by the dragging down of the polypus and the expulsive efforts of the uterus.

633. These symptoms are arranged in the following order by Boivin and Duges: 1. Sympathetic affections, the least indicative of all, as efforts at vomiting, paleness, and anasarca. 2. Leucorrhea, sometimes preceding the formation of the polypus, sometimes occurring a long while afterward, and existing alone, chiefly when

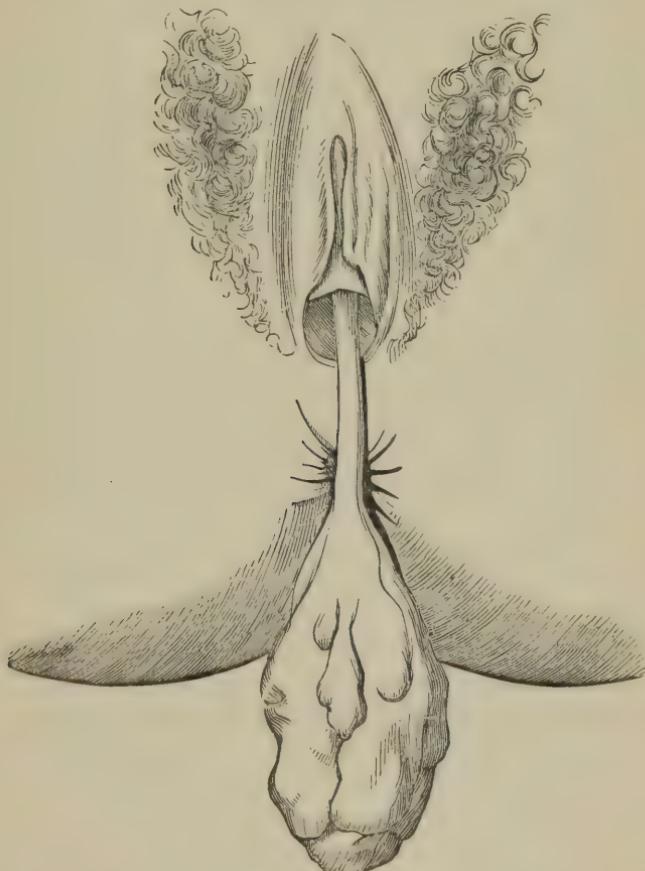


FIG. 29.—LONG PEDICULATED POLYPUS OF THE UTERUS, PROTRUDED THROUGH THE OS EXTERNUM.

the tumor arises from the cervix uteri. 3. Frequent, abundant, and prolonged menorrhagia. 4. Profuse hemorrhage (especially when the polypus occupies the body of the uterus), occasioning debility, exhaustion, and death. 5. Sense of weight in the hypogastrium, and afterwards upon the rectum, a feeling of distension within the pelvis, draggings in the loins and groins, and sometimes retention of the faeces and urine. The coincidence of the last symptoms implies considerable volume in the tumor, which also facilitates the discovery by examination. But, so long as the polypus is concealed within the uterus, all that can be ascertained is the increased size of that organ. If the polypus be situated at the os uteri, or at the cervix, already begun to be dilated, or later in the disease, if suspended from the fundus, it may be ascertained by an examination per vaginam. As soon as the cervix of the uterus has begun to expand, the os uteri partly opens, and the finger being introduced, the convex surface of the tumor is felt, and the nature and cause of the affection become probable. Before the tumor has protruded from the os uteri, this mode of examination may be assisted by pressure upon the hypogastrium—the uterus, already low, by reason of the weight of the polypus and the relaxation of its own ligaments, being further depressed by that pressure. The diagnosis is sometimes more easily determined at this stage of the disease than at a later period; the point of the insertion of the tumor, and the state of the uterus can then be better ascertained, than when the polypus has advanced through the os uteri, occupies the vagina, or pelvic cavity, or even protrudes beyond the os externum.

634. The presence of a small polypus does not prevent conception, and even utero-gestation may go on to the full period. This, however, is not common, the irregularity of the menstrual function caused by the tumor generally proving a cause of sterility, and even should conception occur, an abortion will most frequently take place during some period of gestation.

635. The presence of a polypus sometimes proves a cause of difficult labor, the tumor being extruded before the child and still attached to the uterus, prevents its passage, and the tumor may

require to be removed before the child can be born. It may likewise be the cause of subsequent danger, by preventing the contraction of the uterus, necessary to close the open mouths of the uterine vessels, and by this means give rise to dangerous, if not fatal flooding. Metritis has also been known to result, where a polypus was retained in the cavity of the uterus after delivery.

636. Dr. Montgomery of Dublin, has given this subject a careful investigation, and the following conclusions, the results of his experience, will be found to give a full and correct view of the entire subject. "1. That small polypi, or polypoid excrescences, are of frequent occurrence. 2. That they are often not discernible by the touch alone, and so escape notice. 3. That they may even elude detection with the speculum, unless the instrument is capable of separating the lips of the os. 4. That they are a common cause of ulceration and menorrhagia, the cure of which requires, as a preliminary, the removal of the polypi. 5. That while thus, on the one hand, a small polypus may escape detection, there is, on the other hand, a peculiar condition of the anterior lip of the os uteri, liable to be mistaken for a polypus, and requiring a long time for its removal. 6. That the very small polypus of the os uteri is seldom solitary, and in common with polypi of other kinds, is very often combined with other diseases of the uterus, especially with fibrous tumors. 7. That these small polypi of the os uteri, when occurring in women of advanced age, especially if they are of the vesicular kind, are often the precursors of a malignant form of diseases. 8. That from polypus, being very frequently accompanied by ulceration of the os and cervix uteri, and from its concomitant pain and structural alteration, the symptoms are occasionally mistaken for those of cancer, which error is most likely to be committed, if an examination should happen to be made, just when a polypus of large size is passing through, but still engaged in, and distending the os uteri. 9. That in cases of larger sized polypi, ligature is the means most eligible, as being safer than excision, though not so expeditious; its application having in general the immediate effect of restraining the morbid discharges, and ultimately curing the disease. 10. That polypi and polypoid growths, of small size, are best removed by torsion,

or in some circumstances their destruction may be conveniently accomplished with caustic. 11. That with large polypi, torsion is unsafe, and should not be attempted. 12. That even with one of small size and slender pedicle, excision is not free from risk of troublesome hemorrhage. 13. That in ordinary cases of benign polypus, when no uterine disease exists, the removal of the tumor by ligature is, in a vast majority of instances, completely successful, even in apparently hopeless cases. 14. That in malignant growths, such as cauliflower excrescence, removal by ligature will sometimes effect a complete cure; and that when success is not so decided, much good may be done by the operation. 15. That the situation whence a polypus springs, makes a great difference in the symptoms which it induces; a polypus of the lip of the os gives rise to fewer symptoms and less discharge, than one of smaller size springing from within the os uteri. 16. That fibrous tumors formed in the substance of the uterus, may thence descend, pass through the os, and form an ordinary pediculated polypus in the vagina. 17. That in the unimpregnated uterus, this change will be effected gradually and slowly, but that should pregnancy occur, expulsion of the tumor may take place rapidly, under the action of labor. 18. That a polypus of large size may make its first appearance immediately after delivery. Lastly. That the cure of long standing polypus, with copious discharge, is liable to be followed by a condition of system, requiring to be followed by precautions against a determination to the head.

637. *Diagnosis.*—We have to distinguish polypus of the uterus from *pregnancy*, *vaginal hernia*, *vaginal prolapse*, *cystocele and rectocele*, *scirrhus or cancer uteri*, *cauliflower excrescence*, *prolapsus uteri*, *inversion of the womb*, and from *chronic enlargement, or induration of the uterus*.

638. It may be distinguished from pregnancy by the absence of the *audible* and *tangible* signs, by the gradual progress of the disease, and by the frequent recurrence of hemorrhage.

639. From *vaginal hernia*, by the elastic feel of the intestinal protrusion, by its perfect sensibility to the touch, by its being covered by the mucous membrane of the vagina, while in polypus the finger can be passed entirely around the tumor up to the os

uteri, and by its being generally reducible on compression, and by its giving the characteristic succussion when the patient coughs.

640. It may be distinguished from vaginal prolapse of the entire circumference of the vagina, by the central opening in the tumor in this disease, through which the finger may be passed up, so as to detect the os uteri in situ. From vaginal cystocele and rectocele, by the fact, that they are covered by the vaginal mucous membrane, and that the finger may be passed up to the os uteri, either anterior or posterior to them, the os being found free from the disease.

641. From cancer of the uterus, by the severe pain and other symptoms which generally attend malignant disease, and by the results of a vaginal examination; for if the polypus can be felt, it will not be sensible on pressure, and if its pedicle can be distinguished, the evidence will be positive. Again, cancer of the uterus, in nearly every instance, commences in the cervix, while the contrary is the case with polypi.

642. From cauliflower excrescence, by its greater hardness and smoothness, by its not bleeding when touched, and by the situation of the tumor.

643. From prolapsus uteri, by the os uteri in this case being found at the lower part of the tumor, through which the sound may be introduced into the uterine cavity. The hemorrhages are also absent in prolapsus, and the protrusion is equally sensitive throughout, while the polypus is insensible.

644. From inversion of the uterus, by the gradual appearance of the tumor; while inversion generally occurs suddenly after labor, and is accompanied with collapse, hemorrhage, etc. When inversion is gradual, it is always effected by the weight of a fibrous tumor or polypus, and in this case, the tumor would be found depending from its fundus. The surface of an inverted uterus is rough, while that of a polypus is smooth, and the sensibility is greater and more universal in inversion than in polypus.

645. From chronic enlargement and induration of the uterus, by the diffused swelling and tenderness on pressure, when the womb is thus diseased, while polypi are well defined, and nearly insensible.

646. *Prognosis.*—So long as the polypus continues attached to the uterus, there is always danger, especially is this the case when it is shut up in its cavity, and inaccessible to the hand of the surgeon. Sudden and profuse hemorrhage, or less but more frequent losses of blood, may exhaust and debilitate the patient, thus rendering her liable to be taken off by any disease, or they may of themselves prove suddenly fatal. If, however, the disease be ascertained, the prognosis should be favorable, providing the constitution is not seriously injured, for after the polypus is removed, the patient generally recovers her health rapidly.

647. *Treatment.*—With the exception of a proper attention to the general health, which is necessary in all uterine diseases where the constitution is liable to suffer, the treatment is entirely surgical. The first indication is always to remove the tumor when it is so situated that this can be done. Four means of their removal are presented to us: 1. By ligature, strangulating the tumor, and allowing it to slough off. 2. By torsion, seizing the tumor with a proper instrument, and twisting it off. 3. By excision, some authors recommend the application of the ligature, and the excision of the tumor beyond it. 4. By the use of caustic, disorganizing its pedicle.

648. *Ligation.*—This method of removing polypi is considered by most authors as preferable to any other, not only from the safety of the operation, but little, if any hemorrhage occurring after its application, but also from the general success attending its use. The objections urged against it, are: the difficulty of its application in many cases, the length of time that it takes to separate the tumor, the severe irritation that follows its use, and the putrid and offensive discharge which sometimes arises from the disorganization of the mass, which causes irritation of the genital organs, or may be absorbed, producing severe or fatal irritative fever.

649. The ligature may be employed for the removal of a polypus in any situation, providing its pedicle can be traced from the body of the tumor toward its insertion for a sufficient distance to admit of the application of the ligature to it. Where no serious symptoms arise from its presence, no operative interference is

justifiable, until the polypus has passed through the os uteri into the vagina. If the os uteri is rigid, not dilating readily, especially if the polypus is large, as may be known by the size of the uterus, it has been recommended to use the lobelia, to assist in the dilatation. It has also been recommended to use the ergot, to hasten the expulsion of the tumor, especially if the polypus at times appears, and then disappears. The propriety of these measures depend upon the symptoms present; thus, if there be profuse flooding, or if the hemorrhage is of very frequent recurrence, debilitating the patient, and endangering her life, these means may be employed, or the ligature applied while the tumor is within the uterus, as will be hereafter described; but if there be no dangerous symptoms, we should wait until the polypus was naturally extruded.

650. Many modes of applying the ligature have been recommended, and instruments innumerable invented for the purpose, but all that we desire for practical purposes, is a knowledge of one instrument, and the mode of its application; if this one be adapted to meet the indications of every case that presents. Such an instrument we have, in the double cannula of Dr. Gooch, (see plate 30,) and as it has been variously modified by different practitioners. Dr. Gooch gives the following description of the instrument, and his mode of using it: "The instrument which I use for this purpose, and which, in numerous cases, has assisted me through the operation, consists of two silver tubes, each eight inches long, perfectly straight, separate from one another, and open at both ends. A long ligature, consisting of strong whip-cord, is to be passed up the one tube and down the other, and the two ends of the ligature hang out at the lower ends; the tubes are now to be placed side by side, and guided by the finger, are to be passed up the vagina, along the polypus, till their upper ends reach that part of the stalk round which the ligature is to be applied; and now the tubes are to be separated, and while one is fixed, the other is to be passed quite around the polypus, till it arrives again at its fellow-tube, and touches it. It is obvious that a loop of the ligature will thus encircle the stalk. The two tubes are now to be joined, so as to make them form one instrument;

for this purpose, two rings joined by their edges, and just large enough to slip over the tubes, are to be passed up till they reach the upper ends of the tubes immovably. Two similar rings, connected with the upper by a long rod, are slipped over the lower ends of the tubes, so as to bind them in like manner; thus, the tubes, which at the beginning of the operation were separate, are now fixed together as one instrument. By drawing the ends of the ligatures out at the lower external ends of the tubes, and then twisting and tying them on a part of the instrument which projects from the lower rings, the loop around the stalk is thereby tightened, and, like a silk thread round a wart, it causes it to die and fall off."

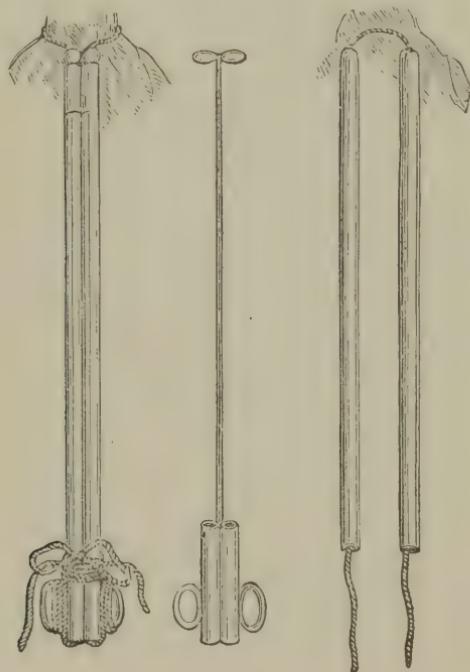


FIG. 30.—DOUBLE CANNULA.

651. After the ligature has been applied, the patient must be cautioned against any sudden movements, as serious injury might occur, if the cannula was forced upward; to diminish the liability

of this danger, it is recommended that the cannula be applied and left anterior to the polypus. The frequency with which the ligature will have to be tightened will vary according to the degree of irritation produced by it. Thus, if there be but slight irritation, the ligature may be tightened every twenty-four hours, until the polypus is detached. Sometimes, however, the irritation and pain is so great that the ligature will have to be loosened after its first application, until this has subsided; at other times, tightening the ligature every two or three days will be often enough. The vagina should be syringed out once or twice a day with warm water, or warm water and castile soap, to remove any offensive discharge, and it will also render the patient much more comfortable. In from six days to three weeks the cannula will come away, and, if the polypus be small it will pass with it; but, if large, it may have to be removed with the hand, or with hooked forceps. The discharge, after the polypus is removed, will often be very profuse, sometimes fetid, and injections of warm water should be frequently used to remove it; if it be fetid, a weak solution of chlorinated soda should be used for the injection. In the majority of cases, not a drop of blood is discharged from the time the ligature is applied, and the portion of the pedicle attached to the uterus is gradually disorganized and discharged.

652. If a polypus be retained within the cavity of the uterus, and gives rise to such profuse hemorrhage as to endanger the life of the patient, it will be necessary to dilate the os uteri and apply the ligature within the uterus. This dilatation may be readily effected by the use of the sponge-tents heretofore described. The first tent that is used will, if well made, expand in from twenty to thirty hours, and open the os to such an extent that the finger may be introduced; it should be followed by larger ones, until sufficient dilatation is effected. There is a probability that when the cervix is dilated in this manner, the polypus will descend into the vagina; if it does not, the ligature may be applied in the cavity of the uterus in the same manner as described above.

653. Another instrument for removing these polypi, that might be used with much advantage, is the Ecraseur of Chassaignac. The principle upon which this instrument acts, is by a slow

division of the tissues, not cutting, but crushing them off; there is no hemorrhage following its use, no danger of phlebitis or of irritative fever; it removes the tumor in a very short time, and thus supersedes the use of the knife. The *ecraseur* consists of a handle and steel cannula, within which are grooves for the passage of a jointed chain, like a chain-saw, but without any teeth, or, perhaps, more like the chain used in watches, the edge being blunted, but not serrated.

From the extremity of the cannula projects a loop, as long as may be required, which is passed around the tumor, and gradually tightened, the handle being moved once in fifteen seconds, when a little click is heard, and the chain tightened, by the drawing into the groove of one of the

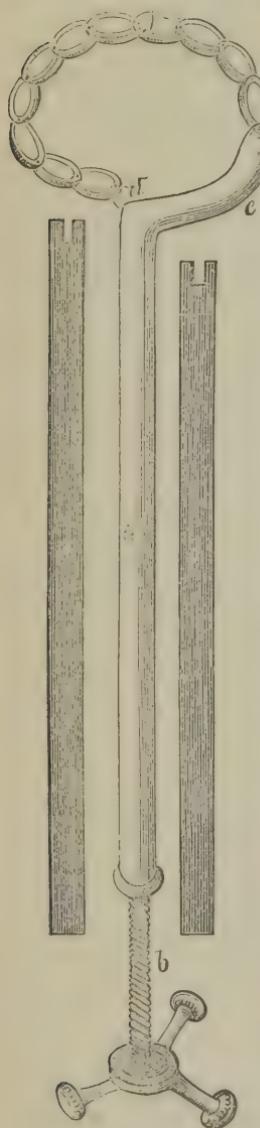


FIG. 31.—THE ECRASEUR.

DESCRIPTION.—The Ecraseur described above is the instrument made use of by English and French Surgeons. It is a somewhat complicated and expensive instrument, but it can be much simplified. Fig. 31 represents the simplest form of the instrument; it consists of an iron or steel cannula, *a*, ten inches long and half an inch in diameter; this is terminated internally by an arm, *e*, to which the fixed extremity of the chain is attached. The chain, *f*, is from six to eight inches in length, attached by one extremity to the arm of the cannula, the other passing into the cannula at *d*, is connected with the screw, *b*. The cavity of the cannula is circular, and of sufficient size to admit the screw, but having a groove on each side to receive a square block half an inch in length, which terminates the chain, and through which the screw passes, terminating in a button beyond. The screw is of the same length as the instrument, and works in a nut cut in the raised portion seen at the outer extremity of the cannula, and which is attached to it by means of a screw. In drawing the links of the chain into the cannula, the screw acts upon the plate terminating the chain, which being received into the grooves of the cannula, is prevented from turning, thus keeping the chain straight. The two whale-bone staffs, *gg*, are intended to assist the surgeon in carrying the chain up to the pedicle of the polypus.

links. This process continues till all the links are drawn into the cannula, and the tumor is cut off. This slow method of producing strangulation and division of the growth, entirely prevents any hemorrhage. A contused wound is produced, and the orifices of the vessels are thus closed. With this instrument a polypus might be removed in from five to thirty minutes.

654. This instrument is much used by the Paris surgeons for the removal of vascular tumors, cancerous growths, hemorrhoids, in fact, prominent tumors of almost every kind. I have no account of its use in removing polypi, but the adaptation of the instrument for this purpose can be seen at a glance. The following cases will serve to illustrate its use, in each of these the patient was under the influence of chloroform; Mr. Erichsen removed some piles, partly internal and partly external, with this instrument, the chain was applied round the tumor, and in the course of five minutes and a quarter the mass was completely cut off without being followed by the slightest bleeding whatever. Mr. Stanley removed a warty exudation from an epithelial chimney-sweeper's cancer of the scrotum, with the same result. Mr. Lawrence removed a very large cellular tumor, weighing nearly a pound and a half, and in size equal to a small child's head, from one side of the generative organs of a young woman aged thirty. Seven minutes sufficed to completely detach it; it was followed by no bleeding, no ligatures, and the parts were brought together by sutures. Mr. Paget removed a vascular growth in connection with the clitoris and labium, so commonly met with in females, it was attended with the same success and the same result as in the other two.

655. From these cases, and others which have been reported, I should much prefer this mode of removing these growths to any other. Its advantages over other modes are, first, the quickness of the operation, the tumor being removed in a few minutes, instead of from eight to twenty-one days as is the case with the ligature. Second, its safety, no hemorrhage or other bad result following its application.

656. It might be urged against the use of this instrument, that its application would be difficult, but if the following directions be

observed, it may be applied as readily as the ligature. In addition to the instrument described, two conducting rods should be made of whalebone, each nine or ten inches in length, and having a groove or mortise at one extremity sufficiently large to receive the chain. (Fig. 31 gg.) The loop of the ecrasur being then made sufficiently long to pass over the polypus, it may be carried up with the conducting rods and the cannula. We thus have the chain supported at three points, and by this means it can be accurately applied.

657. *Torsion.*—Small polypi or polypoid growths from the os or cavity of the cervix may be easily removed, by seizing them with a pair of polypus-forceps, and twisting them off. Or, in many cases, the polypus might be seized with the fingers, and twisted off, especially if the pedicle be small. No hemorrhage ever follows their removal, by this method, when it is applicable, and all that need be done afterward, beside attending to the general health, is to keep the vagina cleansed by the use of injections.

658. *Excision.*—This mode of removing polypi is preferred by many authors, among the most prominent of whom might be mentioned Dieffenbach, Dupuytren, Siebold, Arnalt, Simpson, and Brown. Dupuytren removed 200 polypi in the course of his practice in this manner, and hemorrhage occurred but twice in so large a number. According to Siebold the following circumstances should cause us to prefer excision to the ligature:—
“1. When the polypus is either detruled from the uterus, or can be drawn down with a pair of forceps, or when it is attached to the os or cervix uteri, the stalk being thin, and there being little evidence of vascularity. 2. When the ligature has been applied for some time, and the polypus is within reach, it may be excised below the ligature. 3. When the stalk of the polypus does not separate after the application of the ligature. 4. When the polypus has entailed an inversion of the uterus. And that the two following circumstances are the only cases in which the ligature is preferable:—1. When an artery can be felt, pulsating in the neck of the polypus. 2. When the tumor is so thick that it

probably contains large vessels." Mr. Baker Brown first ligates the polypus, and then divides its pedicle below the ligature.

659. The objections urged against excision are—*First*, the danger of hemorrhage; but this, according to the authors above-quoted, is very uncommon, and when it does occur, it may be readily arrested by the tampon: *Second*, that more or less injury is always liable to occur to the pelvic attachments of the uterus, if it and the polypus are forcibly drawn down with the forceps, so as to bring the pedicle into view before dividing it; and that if it be divided while situated in the vagina, the instruments employed are apt to injure the vaginal walls and neighboring tissue.

660. If this method is adopted, the polypus may be seized with a pair of hooked-forceps and brought down so that its pedicle may be divided externally. Or it may be divided *in situ* with a pair of curved scissors, or a blunt-pointed bistoury, carefully guarding the instrument with a finger introduced into the vagina. Or the curved knife, or polypotome of Dr. Simpson, may be used. This last instrument is in the form of the usual midwifery hook. It consists of a metallic shaft, six inches in length, one extremity of which is bent into a hook, about an inch in diameter. This hook is made of well tempered steel, and its concave surface is formed into a sharp cutting edge. The point of the hook is blunt, to prevent any injury of the tissues. Its other extremity, forming a wooden handle, four inches long; the whole length of the instrument being ten inches. (See Fig. 32). Dr. Simpson says: In employing this polypotome, the stalk of the polypus is first to be reached by the apex of the first finger of the right hand, introduced along the short anterior or pubic surface of the vagina; the instrument is then pushed by the left hand along this finger as a guide, and passed over or above the peduncle of the tumor, in such a direction that the concavity of the hook, will come down upon and embrace this peduncle, as the instrument is pulled downward. The next step is to make the blade of the

FIG. 32.
Polypotome of Dr. Simpson.



polypus-knife cut through the stalk of the tumor. For this purpose, a little simple traction, with a slight rolling or sawing motion, is all that is generally required. If the tissue of the peduncle is dense and strong, the dividing force of the instrument may be increased by the fore-finger of one hand being applied with a traction power to the blunt extremity of the instrument, while the handle is dragged down and moved in a sawing direction, by the other hand of the operator. Sometimes, when the polypus is round and loose, after the curve or hook is applied to its pedicle, the cutting portion of the polypotome will divide this stalk most readily, by merely doubling backward with the fingers the body of the polypus upon its own stalk, and pulling the knife against the bent peduncle."

661. He states that, during the last few years, he has removed a very considerable number of uterine polypi of different sizes, and some of them of large dimensions, in this manner; and that he can speak from somewhat extensive experience of the perfect facility and safety of its employment.

662. *Caustic.*—There are very few if any cases in which the disorganization of the polypus by caustic can be used with better results than the methods already described. Still, some cases may present themselves in which it might be used with advantage. The directions given for the application of the caustic in cancer uteri would be applicable here, and the same precautions should be observed in its use.

CHAPTER X.

HYSTERALGIA, OR NEURALGIA OF THE UTERUS.

663. By neuralgia of the uterus we understand a painful state of that organ, not preceded or occasioned by any other disease. It is for the uterus what gastralgia is for the stomach. It occurs in females during the period of existence of the reproductive functions—say from fifteen to forty-five years of age. It may occur in girls before they reach the age of puberty, or in women after the cessation of the catamenia, though these cases are very rare. Two varieties of this disease are described; the first—hysteralgia—is, in nearly every instance, periodical in its character, occurring either at regular or irregular periods; the patient being entirely free from pain in the intervals. The second variety might be called the chronic stage of the disease. It was first described by Dr. Gooch, under the title of “irritable uterus.” In this the periodical character of the disease has disappeared; the patient complaining of an almost constant pain in the uterus, which is very sensitive to the touch.

664. *Symptoms.*—In real uterine neuralgia, says Dr. Bennet, the pain is principally situated in the uterus itself, to which it is referred by the patient throughout the attack. This pain, generally speaking, comes on suddenly, without being preceded by any premonitory symptom, unless it be a slight numbness. A few minutes before and after the attack, the patient may be perfectly well and free from pain; whereas, during its existence, she is often rolling in agony on the bed or on the floor. Real neuralgia is essentially intermitting in its character; returning for a limited time, at stated intervals, during the twenty-four hours. Sometimes the attacks occur only once in the twenty-four hours; sometimes oftener. They last from an hour or two to ten or twelve. An attack is composed of a series of paroxysms,

each of which is followed by a period of comparative freedom, of variable duration. During the attack, pains are also felt in the lumbo-dorsal, ovarian, and other uterine regions; and there may be exquisite cutaneous sensibility of the entire abdominal region. All these pains, however, disappear, along with the uterine torments, as soon as the attack ceases. The patient then rallies, and, in some cases, loses so completely all painful sensation, that were it not for the recollection of the past, and the fear of the future, she would scarcely know there was any thing amiss with her. On examining a patient who presents these symptoms during the interval of the attack, the cervix and body of the uterus are sometimes found healthy and free from all morbid sensibility. Occasionally, however, some lesion is discovered, which is evidently the origin of the neuralgic symptoms; such as a fibrous tumor developed in the tissue of the uterus, or an ulcerated state of the cervix. In these cases, we find the neuralgic attacks coexisting with the symptoms which are peculiar to these morbid states.

665. According to Dr. Gooch, a patient who is suffering from "*irritable uterus*," complains of pain in the lowest part of the abdomen, along the brim of the pelvis, and often also in the loins. The pain is worse when she is up and taking exercise, and less when she is at rest in the horizontal posture; in this respect it resembles that of *prolapsus uteri*; but there is this difference: that, in the latter, if the patient lies down, she soon becomes quite easy; but, in the complaint of which I am speaking, the recumbent posture, although it diminishes, does not remove the pain. It is always present in some degree, and severe paroxysms often occur, although the patient has been recumbent for a long time. If the uterus is examined, it is found to be exquisitely tender; the finger can be introduced into the vagina, and pressed against its sides without causing uneasiness; but as soon as it reaches and is pressed against the uterus, it gives exquisite pain. This tenderness, however, varies at different times, according to the degree of pain which has been latterly experienced. The neck and body of the uterus feels slightly swollen; but this condition also exists in different degrees; sometimes sufficiently manifest,

sometimes scarcely or not at all perceptible. Excepting this tenderness, and occasionally this swelling, or rather tension, the uterus feels perfectly natural in structure; there is no evidence of scirrhous of the neck; the orifice is not misshapen; its edges are not indurated. The patient, finding her pain greatly increased by rising and walking, soon learns to relieve herself by lying on the sofa, and at length spends nearly her whole time there. Notwithstanding this precaution, there is always a considerable degree of uneasiness; but this frequently increases to severe pain. These paroxysms generally come on either a few days before menstruation, or (as is the case in many instances) a few days afterward. If the paroxysm is properly treated, it subsides in a few days to the ordinary and more moderate uneasiness. While this uneasiness is felt in the substance of the uterus, the general circulation is but little disturbed. The pulse is soft, and not much quicker than is natural; but it is easily quickened by the slightest emotion. In a few instances, however, there has been a greater and more permanent excitement of the general circulation; the degree in which the health has been reduced, has been different in different cases. A patient who was originally delicate, who has suffered long, and has used much depleting treatment, has been (as might reasonably be expected) the most reduced; she has grown thin, pale, weak, and nervous; menstruation often continues regular, but sometimes diminishes, or ceases altogether; the functions of the stomach and bowels are not more interrupted than might be expected from the loss of air and exercise; the appetite is not good, and the bowels require aperients; yet nothing more surely occasions a paroxysm of pain than an active purgative.

666. *Diagnosis.*—In the first variety of uterine neuralgia, the periodicity of the disease will serve to distinguish it from any organic affection of the uterus: for where the disease involves a change of structure, the pain and uneasiness are continuous, there being no perfect intermissions.

667. It may be distinguished from *inflammation of the cervix uteri* by the absence of swelling, heat, redness, and especially

the dilatation of the os uteri, and the muco-purulent secretion, which are almost pathognomonic of this affection.

668. From *neuralgic dysmenorrhea*, by the pain and other symptoms continuing throughout the menstrual interval, instead of ceasing with the catamenia.

669. From *prolapsus uteri*, for which it would be most likely to be mistaken, owing to the increased suffering when in an upright position, by a vaginal examination, the uterus being found in *situ*.

670. *Treatment.*—Neuralgia of the uterus may be distinctly periodic in character, and in malarial regions will require the treatment of a masked ague. The patient is carefully prepared for the use of quinine, if any thing needs be done, and the agent is then given to the extent of twelve, fifteen, or even twenty grains, during the intermission or remission. In place of the quinine, we may sometimes use the carbazotate of ammonia, in doses of from one-eighth to one-half grain, for a cure.

671. When it is not periodic we make a careful examination of the case to determine the indications for remedies, for the pain yields to the right remedy, if we can find it. In some cases the Aconite with Macrotys will reach the case, the pulse showing excitation. In others the nervousness, with the peculiar character of the pain (tensive) calls for Pulsatilla and Macrotys. When the pain has an expulsive character, give Viburnum alone or with Macrotys. If there is heaviness and dragging, and it is near the menstrual period, give Gossypium. If the patient is dull and inclined to sleep, give Belladonna with Aconite. If there is scanty urine, and the uterine pain is attended with expulsive efforts of the bladder, give Gelsemium; this remedy is also indicated by the flushed face, bright eyes, and contracted pupils, showing determination of blood to the brain. Rhus is indicated in many cases by the burning character of the pain, as well as by the usual symptoms. Bromide of Potash is called for by sexual excitement; Bromide of Ammonium by hysterical symptoms, especially involving the muscular system. Prussiate of Potash may be used with advantage when the patient is hysterical, suffers severely from want of rest, and the mucous membranes are lax and pallid.

Nux Vomica is indicated when there is nausea associated with evidence of atony of the stomach; we also use it when the pain shoots from the uterus upwards towards the umbilicus. This has sometimes been known as uterine colic. In these latter cases we usually combine the Nux with Macrotys, in the usual small doses.

Nitric Acid is an excellent remedy when the tongue shows the peculiar violet coloration, whether the disease is periodic or not. Iodide of Potassium is the remedy when the tongue is expressionless and of a *leaden pallor*. (This case may or may not be syphilitic, but the remedy is equally good in either.) Arsenicum may be used when the pulse is soft and feeble, and the skin expressionless, the dose being small.

672. In other cases we find an associate wrong of the digestive organs and of the blood, and we get the indications for treatment from the tongue. There is a case in which we find most marked advantage from the use of Sulphite of Soda—the tongue being broad, pallid and dirty—and still there is a worse case, in which the very dirty tongue, with weight and fullness in the epigastric region, calls for an emetic. The fullness of tongue, fullness of tissue, venous fullness, and dizziness, call for Podophyllin, either in large or small doses.

673. When we see no indication for a specific remedy, we may use the hypodermic injection of morphia, or may use it in any case where the pain is so severe as to demand prompt relief. I use a solution of ten grains of sulphate of morphia to the ounce of water—the quantity necessary to relieve the pain being from ten to thirty drops—fifteen drops may be considered the medium dose. I prefer to insert the injection near the seat of the pain, and in this case the upper part of the thigh or the abdomen would be best, but modesty will usually cause us to put it in the arm. I prefer the hypodermic injection in this case to either chloral or morphia used internally, though it must not be continued to form a habit. The object should be, in all cases, to mitigate local suffering, and to sustain and improve the general health, as the disease is tedious of cure, and liable to relapse.

674. I may report one case of this disease. It presented all the symptoms heretofore described, though not in such an aggravated degree. No structural disease could be discovered by the closest examination. In this case I directed the use of the hand-

bath every morning, commencing with water agreeably warm, and gradually cooling it, until quite cold water could be used; these baths were followed by brisk and long-continued friction, sufficient to redden the skin and bring the circulation to the surface. At first, she could hardly bear the weight of the hand over the hypogastric region, but by continuing the friction, the sensibility gradually decreased. Vaginal injections were used, with the pump-syringe, morning and night. The water was used at first tepid, but afterward quite cold. The bowels were kept regular by injections of warm water.

675. During the entire treatment she took three of the following pills a day:

R Iodine, gr. v.
Extract of Nux Vomica, gr. iij.
Macrotin, gr. xv.

M. Ft. Pillula, xx. To relieve the constant pain in the small of the back, an irritating plaster was applied, and worn for two or three weeks intermittently; it produced counter-irritation, but was never left on sufficiently long to produce suppuration. To improve the general health, the hydrastin, *præ*-carbonate of iron, and ale, were first administered; as this lost its effect, it was changed for hydrastis canadensis, prussiate of iron and tincture of xanthoxylum, and then to the compound tincture of Peruvian bark and iron. Under this treatment a marked improvement of the general health could be noticed in a short time, and as this improvement progressed, the local difficulty likewise became ameliorated. The treatment was continued for some two months, and resulted in a perfect cure, the lady having had no relapse since. In reference to the means employed, she ascribed the cure principally to the daily baths, and especially to the friction over the hypogastrium, as she always felt much better after it.

RHEUMATISM OF THE UTERUS.

676. Rheumatism of the womb may occur in the non-pregnant female, but it is much oftener met with during pregnancy. It may arise at any stage of gestation, but it is much more frequent

toward the termination, when the uterus has acquired its maximum enlargement. Any part of the uterus is liable to the affection; thus, it may affect and be confined to the cervix, body, or fundus of the organ, or the entire uterus may suffer from it. With the affection of the uterus there sometimes exists a general affection of the same nature, involving other portions of the body but, most generally, the uterus and the pelvic viscera adjacent, are the only parts affected. Like rheumatism of any other part of the body, there is, frequently, a metastasis of the pain from one part of the organ to another, or to the adjacent parts, or to some distant part of the system, or it may disappear suddenly, again recurring at a longer or shorter interval.

677. *Causes.*—The causes that produce rheumatism of the uterus are the same that would produce the disease in any other portion of the system; as exposure to cold, atmosperical changes, especially to a sudden chill when overheated, as by sitting in a draught of air, or in some damp place, as a cellar, etc. According to M. Cazeaux there is one cause peculiar to the malady under consideration. This is the facility with which this organ, under the thinned integuments of the abdomen, feels the impression of cold in the latter months of pregnancy; the abdomen being guarded, where it incloses the uterus, only by extremely light garments, which are closely in contact with it, and the lumbosacral region being often badly protected by jackets of insufficient length.

678. *Symptoms.*—According to the same author, "rheumatism of the womb often attacks persons constitutionally predisposed to nephritis. It may coexist with a general affection of the same nature; but, in a majority of cases, the uterus alone, and the adjacent structures are the seats of the disorder. It has, beside, been frequently found to be a consequence of the sudden cessation of rheumatic pain, originally situated in some other part and suddenly transposed to the womb. Whatever may be the mode of its onset, the disorder is easily recognized by very decided characteristic features. Its principal symptom is pain; where not the least violence has been offered to the organ, the womb becomes the seat of general or partial pain, the intensity of which varies

from the slightest sense of weight up to the most insupportable agony. It may affect the uterus wholly, or only attack some particular part of it, as the orifice, the fundus or the cervix. Where rheumatism is fixed in the fundus only, the pain is felt in the region above the umbilicus. It is increased by pressure, by the contraction of the abdominal muscles, and sometimes by the mere weight of the clothes; the patient is often unable to move; if the disorder is situated lower down, there are shooting pains that run from the loins toward the pelvis, the thighs, the external genitals, and the sacral region, along the ligaments of the uterus. Lastly, when the cervix is the affected part, it may be known by the vaginal touch, which gives rise to excessive suffering. But of all the causes that serve to exasperate the pain, none is so distressing as the incessant motions of the child.

679. "Like other rheumatic pains, those of the womb are movable, and are observed occasionally to pass suddenly from one portion of the organ to another. They often suddenly cease and proceed to attack some other organ. This is most apt to happen, where the uterine rheumatism has been preceded by a fixed pain of some other part of the body, and where remedies are in use calculated to recall the pain to its original seat.

680. "These pains are characterized by frequent exacerbations that are variable as to duration and intensity, according to the stage of the malady; they are succeeded by remissions, during which the patient scarcely complains of a vague sense of pain.

681. "The pains of uterine rheumatism are generally attended with a degree of recto-vesical tenesmus, which is violent in proportion to the severity of the pains and the approximation of the seat of the rheumatism to the lower segment of the organ. In such cases the patient is tormented by perpetual desire to urinate. The discharge of urine is accompanied with smarting pain, sometimes with severe pains, and in some instances the discharge can not be effected at all. The efforts to discharge the contents of the rectum are, in some cases, equally fruitless.

682. "Pains of such violence, situated in an organ so important, must of necessity, produce a pretty severe general reæction.

The disorder, like most of the inflammatory diseases, generally commences with a slight rigor, which lasts fifteen or twenty minutes. The succeeding fever diminishes, or may even wholly cease during the interval between the attacks, yet, while they last, it is commonly quite severe; the pulse is hard and frequent, the face flushed and excited, the tongue red and dry, the thirst urgent; the skin is hot, and the patient is often found to be extremely agitated and restless. Toward the close of the paroxysm, there frequently supervenes a copious sweat, which seems to be the harbinger of a decided improvement. After this, these general symptoms are appeased, together with the uterine pains, only to reappear with them, after the lapse of a few hours, or even of several days."

683. Two very important points yet remain for investigation, viz: the influence of rheumatism on the progress of pregnancy, and its influence upon labor. M. Cazeaux says: "Though the attacks have persisted for a length of time, or when they have been very violent, they are followed by uterine contractions, and may in this way, bring on premature delivery. In such a case, the patient suffers from severe tensive pain. This tension is not equable, for it rises to a great hight, and then subsides—to begin again and pursue the same course at different intervals. At first, the womb becomes partially, and afterward universally hardened, during the pain. The cervix becomes rigid and partially dilated, but its dilatation is at first slow and difficult, and its subsequent progress does not correspond with the pace of the pains. The abortion with which she is now menaced, is more likely to take place in the febrile than in the apyretic form of the disease. Indeed, abortion is not so common an occurrence in the case as might be presumed. In some instances the os uteri has been observed to dilate to the extent of three-fourths of an inch or an inch and a quarter in diameter, the bag of waters has been formed, and afterward withdrawn little by little, the orifice closing again, and all symptoms of labor wholly disappear. So long as the diameter of the os uteri does not reach the extent of five centimeters, we may reasonably hope to put off the labor. These uterine rheumatic-pains may simulate labor-pains, and lead to

the belief that they are real labor-pains, when, in fact, they are not so.

684. "An attack of uterine rheumatism generally retards the progress of a labor, and sometimes even renders the spontaneous expulsion of the fetus wholly impossible. In addition to the general phenomena I have described, there are here some special ones to be met with: 1. It is well known that a normal contraction does not begin to be painful, until it has accomplished the greater part of its task, and is in the act of dilating and distending the os uteri; in other words, the true pains of labor do not begin until the force of the body of the womb begins to overcome the resistance of the cervix. In rheumatism of the womb, on the contrary, the uterine contraction is painful from the commencement, and before the least power is exerted upon the neck, so that the cause of the pain is not in the violent distension of the orifice, but in the contraction itself, in other morbid circumstances, and in other relations of the nerves and contractile fibers of the uterus. 2. In natural labor, the contractions commence at the fundus uteri, and are directed toward the lower segment. In rheumatism, instead of commencing at the fundus, they commence at the painful point, and run toward the neck in an irregular manner. Again, the pains exist before the contractions of the womb; and under their influence, when they are established, acquire a high degree of intensity. Its violence sometimes arrests the contractions before they have run through their ordinary cycle. They are in such a case brisk, short, and grow less and less frequent. 3. Toward the close of the labor, when the action of the womb requires to be sustained by the voluntary contraction of the abdominal muscles, the woman for fear of increasing her sufferings, refrains from contracting her abdominal muscles, which causes the labor to be excessively slow. The patient is in a state of extreme anxiety; the frequent pulse, the hot skin, the thirst, the urinary tenesmus, are much augmented. When the sufferings are too much protracted, she at last falls into a collapse (which is often a fortunate event,) during which the pain is suspended. Under these circumstances, a profuse sweat has been observed, which has had the happiest effect on the rest

of the labor. But in other instances, the womb grows more and more painful; it is rather in a state of permanent contraction or fibrillar vibration, than of real contraction; the pulse becomes accelerated, and then the woman is under the influence of a metritis which renders the labor extremely painful."

685. The painful effects of uterine rheumatism do not always terminate with delivery. The contraction of the organ is slow and incomplete, the uterine vessels are less compressed, and hence copious flooding may occur. The after pains are very severe, and continue for a long time, the lochial discharge is diminished in quantity, and the secretion of milk is often scanty. The persistence of abdominal pain, added to the symptoms of general reäction, might lead to the diagnosis of peritoneal inflammation, though none such should really exist.

686. *Diagnosis.*—It is important to distinguish rheumatism from inflammation, and this is sometimes very difficult. If the patient have had previous attacks of rheumatism, especially if they have just preceded the uterine disease, and ceased shortly before, or on its appearance, we will have good grounds to suspect the character of the disease. Rheumatism, also, as a general rule, sets in more quickly, and is paroxysmal in character. It is also said that the difference may be detected by the vaginal touch. In both diseases the uterus is painful to the touch, but in inflammation the pain continues as long as the finger is applied to it, while in rheumatism, if the organ is slowly raised with the fingers, the pain either ceases wholly, or is much mitigated by taking off, in this way, the tenesmus uteri. It may be distinguished from neuralgia of the uterus, by the periodic character of the pain in this last disease, and by the remissions being longer and more decided; the abdomen is not so generally tender, nor is the constitutional suffering so great.

687. *Treatment.*—The treatment of rheumatism of the uterus will be very like the treatment of rheumatism elsewhere—no single remedy, however good, being sufficient to relieve all cases. It is true, however, that the group of anti-rheumatics influencing the reproductive organs and functions are more generally indicated than the others. Of these the Macrotys holds the first

place, and deserves the careful study of the physician. In rheumatism occurring during pregnancy it is *par excellence* the remedy, unless it should be a very severe attack, or a metastasis of the disease from some other part. In the majority of cases, the weight, dragging, tenderness, annoying pain as of contraction, sometimes simulating labor pains, are speedily relieved by this remedy. The extreme tenderness or irritability of the organ, sometimes met with, is not relieved so speedily, and may require additional remedies. I usually prescribe the Macrotys with Aconite if there is the slightest evidence of fever, as—

R Tinct. Aconite, gtt. v. to gtt. x.
Tinct. Macrotys, gtt. xxx. to 3j.
Water, 3iv. M.

A teaspoonful every hour to three hours.

688. When the extremities are cool, the surface pallid, and the abdomen tumid and relaxed, especially if associated with colicky pains, I give Nux in place of the Aconite. Bryonia is the remedy, and may be given alone, with the Aconite, or with the Macrotys, when the pains are sharp, lancinating, evidently peritoneal. It is also suggested when the patient coughs, and has some pleuritic pain. Apocynum is to be thought of when the patient has swollen feet, puffed eyelids, redness of the labia, or inclination to menorrhagia. Viburnum is always to be thought of as a remedy in rheumatism during pregnancy, when there is threatened abortion; it may be combined with either of the others named. Sticta Pulmonaria becomes a valuable remedy when the patient complains of pain and soreness in the shoulders and back of the neck, extending to the occiput, and sometimes with a most unpleasant cough. The Eupatorium Perf. is a good remedy when the pains are dull and heavy, with pressing down in the region of the bladder and difficult micturition. It may be given with Aconite or with Macrotys, as—

R Tinct. Eupatorium, gtt. xx.
Tinct. Macrotys, 3ss.
Water, 3iv. M.

A teaspoonful every hour.

689. In acute inflammatory rheumatism, if the special indications named above are not present, I would advise a trial of Salicylic Acid, following with the Macrotys as soon as the pain is relieved. It may be given in pill form, adding Glycerine to the

Salicylic Acid and a small portion of Borax, until of the consistency of a pill mass—making four or five grain pills, and giving one every hour or two until relief is obtained. Or we may use the remedy in solution, as—

R Salicylic Acid, 3ij.

Acetate of Potash, 3ij.

Distilled Water, 3ij. M.

A teaspoonful every two or three hours.

690. My experience proves to me that if the remedies named be used during the latter months of pregnancy, when the patient is suffering from unpleasant sensations in the uterus, due to rheumatism, we will not have the serious trouble sometimes met with during labor. The Macrotys alone will meet the most of these cases, and is a true *partus preparator*. Even when the case is first seen during the progress of the labor, I should expect very satisfactory results in mitigating false pain, and relieving irritation.

CHAPTER XI.

DISPLACEMENTS OF THE UTERUS.

691. Under this head we have to consider *prolapsus uteri*, or the displacement of the uterus downward; *retroversion* and *retroflexion*, or the displacement of the fundus uteri backward, the cervix being thrown forward, or remaining in situ; *anteversion* and *anteflexion*, or the displacement of the fundus forward, the cervix being thrown backward, or remaining in situ; and *inversion of the uterus*, or where the uterus is turned inside out, the fundus and body of the womb descending through the os, the mucous membrane being external. In all these displacements the position of the uterus may be changed but slightly, or it may be completely displaced, or it may vary in degree from one to the other.

692. When we consider the anatomical relations of this organ, and the structures which support and keep it in its proper posi-

tion, as well as the many changes in size, weight, and position that necessarily take place during pregnancy, the frequent congestion and enlargement of the organ, the presence of tumors, and the diseased enlargements of the abdominal and pelvic viscera, we will see at once, that of all the organs in the body, this is the most liable to displacement.

PROLAPSE OF THE UTERUS.

693. This form of displacement is more common than any other; it consists in a depression of the uterus below its natural level, and may exist in very various degrees. Three varieties are named by authors, according to the extent of the displacement. 1, relaxation of the womb; 2, prolapsus; and 3, procidentia.

694. The first variety, or relaxation, may be called the incipient stage of the disease, the uterus having sunk below its normal elevation, toward the outlet of the pelvis, without, however, descending so low as to rest on the perineum.

695. In the second variety, or prolapsus, the uterus has descended nearly or quite to the os externum, the organ resting on the perineum. In this position it fills the vagina, the upper part of which is folded upon itself; the uterus, thus situated, lies in the direction of the axis of the outlet of the pelvis.

696. In the third variety, or procidentia, there is a complete protrusion of the uterus beyond the vulva, the vagina is everted and turned inside out, forming the external investment of the body and fundus of the organ. In this displacement the bladder and rectum are more or less involved; in some cases of long standing the tumor containing the bladder, a portion of the rectum, and sometimes of the small intestine.

697. *Causes.*—We have here first to consider the means by which the uterus is supported, and then we will be better able to understand the causes that will affect the structures forming this support, or the uterus itself, changing its size and weight, and thus enabling it to overcome the resistance offered to its descent. By referring to the anatomy of the genital organs, it will be found that the outlet of the pelvis is closed, first, by the perineum, a dense, fibro-cellular structure, situated in the center of the

outlet, and second, by muscles and fascia which have one point of attachment to the bony walls of the pelvis, and the other to

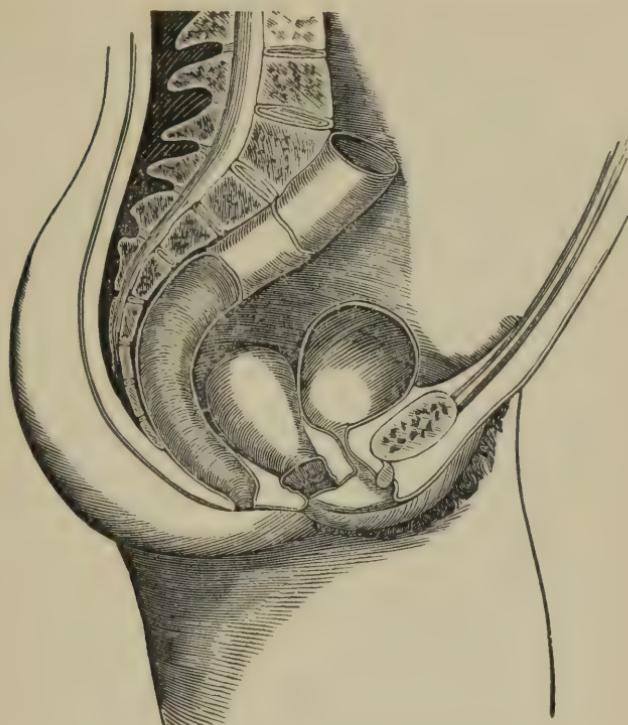


FIG. 33.—PROLAPSE OF THE UTERUS.

this central structure, the perineum. This musculo-membranous structure closing the outlet, supports the pelvic viscera, and antagonizes the action of the diaphragm and the abdominal muscles. Through it passes three canals, the rectum, vagina, and urethra, each being supported below by the perineum and the muscles attached to it, and are inclosed above by the funnel-shaped muscle, the levator ani. The vagina lying between the rectum and bladder is compressed between the two, the anterior and posterior walls being in contact, and forming a solid column instead of a hollow-cylinder; this column being supported below by its attachment to the pubic bones and perineum. Upon it, at

its upper extremity, rests the uterus, situated between the rectum behind and the bladder in front. By carefully examining these structures, it will be seen that so long as the musculo-membranous structure closing the outlet is sufficient to resist the action of the diaphragm and abdominal muscles, and the vagina retains its normal healthy structure, the uterus has a perfect support from below, and that prolapse cannot occur, as a general rule, so long as this is the case. That the ligaments of the uterus do not contribute but very little, if any, to this support, is proved by the fact that the organ can be drawn down to the os externum without putting them on the stretch.

698. In support of the above views, several authors might be quoted; Dr. Ashwell says: "Little doubt can exist in the minds of those who have carefully studied the anatomy of the pelvic viscera, that the vagina, bladder, and rectum, together with the muscles lining the cavity and forming the flooring of the pelvis, have the principal share in maintaining the uterus in its natural position." Dr. Burns says: "By experiments made on the dead subject, we find that more resistance is afforded to the protrusion, by the connection of the uterus and vagina to the neighboring parts, than by the agency of the ligaments; for, although the ligaments be cut, we can not, without much force, make the uterus protrude. A debility or relaxation of the levator ani and perineal muscles, but particularly an extension and slackness of the pelvic fascia and its connection with the uterus and vagina, are in a great measure essential to the production of prolapsus." Dr. Bennet says: "Prolapsus, or falling of the uterus, either partial or complete, is generally attributed to laxity of the uterine ligaments. This opinion I believe to be mistaken, and to be founded on an anatomical error. The uterus is not so much supported and retained in situ by its ligaments, as by the pressure of the surrounding organs and the contraction of the upper part of the vagina on its lower segment. The vagina, in the healthy state, is not a mere open pouch, but a contractile closed canal, like the rectum, which closes on and supports the uterine neck, and, in my opinion, has, generally speaking, almost as much to do with the support of the uterus as the uterine ligaments

themselves." Dr. Hamilton says: "It is evident that the bladder, the vagina, the rectum, and, more especially, the muscles lining the pelvis, and those connecting the lower part of the trunk and the inferior extremities, mainly contribute to hold the uterus in its natural position. It will be found that, in every case of prolapsus uteri, the vagina, or bladder, or rectum, or muscles lining the pelvis, or filling up its outlet, are debilitated, or lacerated, and therefore the relaxation of the peritoneum and its production (the ligaments of the uterus) is the effect of prolapsus, and not its cause. Cases of prolapsus in virgins, it may be alleged, furnish an objection to this reasoning. Such cases may be easily explained. The accident in these cases is the effect of a sudden exertion in moving the body, at a time when the usual supports of the uterus are relaxed, viz.: during menstruation; while that process goes on, every part connected with the uterus feels flabby and open to the woman herself, and any violent action of the locomotive muscles, as in leaping, or dancing, or running, must occasion displacement of the uterus, in the same way that it would force out a portion of the intestine, if the abdominal muscles were weakened at their ring."

699. Another fact that I have noticed in cases of this disease, and which, I think, has an important bearing, not only in regard to the pathology of the disease, but also in regard to the treatment, is the invariably lax and flaccid state of the abdominal muscles. It might seem strange that even if this was the case in this disease, it would have any effect on the displacement, and we would even judge from first sight, that it would be rather favorable than otherwise. Yet it is a well-known fact, that the strength and tonicity of any tissue, more especially of muscular fiber, is increased in proportion to the amount of resistance required of it, and *vice versa*. Thus, if, from any cause, and the most frequent is want of proper attention after child-bearing, the abdominal muscles become weakened, there is much less pressure exerted on the perineum, the nutrition of the perineal muscles is weakened, and after a length of time, they lose their normal power of contraction, and the result is a passive prolapse of the uterus. That this is an important cause of the disease, is

well shown by the benefit that is obtained from properly constructed abdominal supporters, which, instead of increasing the prolapse, as it might seem, by compressing the abdominal and pelvic contents, in a majority of cases furnishes great relief.

700. This lengthy consideration of the anatomy and pathology of the disease may seem out of place, yet I believe it will be found of more advantage to the practitioner than pages of empirical treatment. In studying a disease, we wish first to know its pathological character, and the structures involved in it, and then the treatment becomes comparatively easy. It certainly would make a great difference in the treatment of this disease, whether we considered that it arose from a relaxation of the vagina, the perineum and its muscles, and the abdominal walls, or whether, according to the generally received opinion, it arose from a relaxation of the uterine ligaments.

701. The causes that produce this relaxation, are: frequent child-bearing, abortions, the too early adoption, or too long continuance of the erect posture after delivery or miscarriage, before the uterus and its connections have recovered their normal size and tone. Again, chronic catarrh of the vagina, by weakening the vaginal walls, will also pre-dispose the patient to prolapse.

702. Another cause of prolapsus, even where the support is sufficient to retain the normal-sized uterus in position, is to be found in the hypertrophy and consequent increased weight of the cervix uteri, or even the entire organ, the result of inflammation. It may also be caused from the increased weight of the organ in congestion, or from the presence of fibroid tumors, malignant growths, etc. According to Dr. Bennet, "The partial prolapsus of the uterus is really owing, in the immense majority of cases, solely to increase in the volume and weight of the cervix, and to the relaxed state of the vagina, induced by inflammation and distention, must soon become apparent to any practitioner who gives himself the trouble accurately to ascertain the position of the enlarged and inflamed cervix, when a patient first applies to him for advice, and to compare it with that which it occupies when the ulceration is healed, the hypertrophy reduced, and the vagina restored to a healthy state of contractility. He will

then almost invariably find the cervix two or three inches higher; the finger which at first found the cervix low down, just behind the vulva, being often barely able to reach it."

703. *Symptoms.*—The symptoms of this affection vary much according to the degree of displacement, and the cause by which it was produced. Those produced by the displacement itself, are principally mechanical, arising from the pressure of the prolapsed uterus on the adjacent organs, and the sympathies existing between the uterus and other parts of the system.

704. In the first degree of prolapse, or relaxation, the symptoms are very slight, without it arises from inflammation and hypertrophy of the cervix, or some other structural disease of the organ, when the symptoms will be those of the structural disease, and not consequent on the displacement. In some cases, where no uterine disease exists except the displacement, the patient complains of a dull, heavy pain in the small of the back, and a sensation of weight and dragging in the pelvis, and extending to the anus; this becomes more painful by remaining long on the feet, or by too much exercise.

705. According to M. Colombat, most of the symptoms of prolapsus in the second stage are *mechanical*, produced by the pressure of the uterus upon the surrounding parts, especially the bladder and rectum. This is put beyond question, by the fact, that all the symptoms are diminished by rest, and particularly by rest in the horizontal position, whereas their violence is greatly increased by standing and walking. Where the displacement has been gradually produced, the symptoms attending it are less severe than when it takes place suddenly; where it is suddenly produced, it is frequently accompanied with long, protracted faintings, violent floodings, some pain in the pelvis, vomiting, and sometimes even an intense attack of peritonitis. But on the contrary, where the displacement takes place slowly, these phenomena are rarely observed, because the organs having slowly abandoned their natural situation, become, in a measure, accustomed to the unnatural situation they have assumed.

706. In complete prolapse, or procidentia uteri, the symptoms above named are generally aggravated, the pain in the back is

more severe, and accompanied by pain in the groins and labia, in which there is a sensation of fullness. The sensation of weight and dragging down, "as if (as the patients will describe it) every thing is dropping through." The patient can not remain in the erect posture for any length of time, and exercise aggravates her sufferings, and she finds ease only in the horizontal position. To these symptoms are frequently added those of obstinate constipation, tenesmus, a frequent but ineffectual desire to evacuate the rectum, etc. The bladder is likewise more or less affected, the patient having a frequent desire to urinate, or there may be entire inability to pass the urine, or it may pass in drops, the patient being unable to retain it; in some cases, the patient will have to lie down and partly replace the uterus before the urine can be passed.

707. The effect produced by this displacement on the general health is very various. Some patients will make no complaint; their general health being as good as it was before the displacement, even in the worst form of it. In others, the digestive organs sympathize with the uterine disease; there is disorder of the stomach, loss of appetite, or it may be capricious, dyspepsia, distension of the abdomen, headache, etc.

708. The menstrual functions are very rarely disturbed; menstruation occurring at the regular intervals and in normal quantity. The reproductive functions are likewise very little disturbed; the prolapse of the uterus proving no impediment to impregnation, so long as the uterus is retained within the vagina, or can be returned. Prolapse of the uterus, in nearly every case, is accompanied with more or less leucorrhæal discharge; this generally arises from the vagina, without there also exists inflammation of the cervix, when the canal of the cervix will furnish a portion of the secretion.

709. *Diagnosis.*—No difficulty will be experienced in forming a diagnosis, if a careful vaginal examination be made. It will be recollected that in prolapsus uteri, in every case, the os uteri will be the lowest portion of the tumor, when then *the os uteri presents at the lowest portion of the tumor*, it is perfectly conclusive in any degree of displacement. If there should be any doubt that it is

the os, the uterine sound or a small bougie, introduced into the uterus, will be proof positive. It can never be difficult to distinguish prolapse of the uterus from inversion, as in this latter disease the os uteri will be absent, and the mucous membrane of the organ, which now forms its external investment, can not be mistaken for the smooth, pink-colored, and shining vagina.

710. *Treatment.*—The treatment of this disease presents two indications; first, to return the prolapsed organ to its natural position, and second, to prevent a recurrence of the displacement. Though the indications are very plain, there is a great difference in the means recommended by authors to meet them. Among the measures recommended may be mentioned, rest in the horizontal position as long as possible, the use of vaginal injections of the vegetable and metallic astringents, the use of the pessary, and a surgical operation for the contraction of the vagina denominated *episorrhaphia*.

711. Though rest in the horizontal position will give temporary relief, yet it can never effect a cure without appropriate means to give strength and tone to the vagina, the perineal muscles, etc. Even then it is disadvantageous; for the structures which support the uterus lose their power when the natural pressure is taken off. We might just as well expect the muscles of the blacksmith's arm to increase in size and strength by keeping it extended upon a splint, as to expect the perineal structures to regain their tone by removing the tension upon them. This view of the subject is supported by Dr. Hamilton. He says: "Although the horizontal posture immediately relieves the uneasy feelings of the patient, the author (long ago) ascertained that it tended not only to *impair the general health*, but also to *aggravate the disease*, by increasing the relaxation of the natural supports of the womb;" and daily experience has established the truth of this opinion.

712. Astringent injections have been much used in this disease, even by those who advocate the theory that prolapsus uteri arises from relaxation of the uterine ligaments. That they give temporary relief, can not be denied; but that permanent benefit should be derived from their use, I think may be doubted. Dr. Hamilton objects to their use on the following grounds:

“1st. On the supposition that styptic injections were safe, and that they could readily restore tone to the vagina, (which the author concedes for the sake of argument, for the contrary is his sincere belief), it must be obvious that, if his view of the nature of the disease be correct, no benefit could accrue from the practice. Accordingly, no practitioner trusts to those means, in cases of any considerable degree of prolapsus uteri. 2d. It is admitted that, as the irritability of the mucous membrane of the vagina varies in different women, as well as in the same woman at different periods of time, the injection of strong astringents may prove injurious. Doubts are therefore entertained of the safety of the practice, even by those who recommend it. 3d. The author’s experience has convinced him, that astringent injections into the vagina are apt to injure the uterus rather than the canal into which they are thrown. He can solemnly aver, that the numerous cases of chronic enlargement of the uterus, which have fallen under his notice, by far the greater number had been unequivocally occasioned by the use of styptic injections *per vaginam*. 4th. The immediate effect of such injections, in cases of prolapsus uteri of any standing—viz., the diminution or suppression of leucorrhæal discharge—has been, in many cases, followed by distressing head-aches, or obstinate inflammation of the eyes, or eruptions on the face.”

713. We have a class of agents, however, some of which have slight astringent properties, against which the above objections do not hold good ; they are beneficial, not on account of their astrin-gency, but from their stimulant and tonic effect on the vaginal canal and the parts adjacent. Of these agents we might enum-erate the *Hydrastis Canadensis*, *Rubus Villosum*, *Statice Limonum*, *Rhus Glabrum*, *Myrica Cerifera*, and others. The indications for the use of these agents are, the existence of that state of chronic inflammation of the vaginal mucous membrane known as vaginal catarrh, or vaginal leucorrhæa. This condition may exist previous to, and be one of the producing causes of the displacement, or it may arise after, and be an effect of it. The directions for the use of the above agents in this condition, will be found under the head of chronic vaginitis.

714. The use of pessaries in the treatment of displacement of the uterus is of the highest antiquity; they were used by the Egyptians, Greeks, Romans, and Arabians, and, at the present time, they are in general use as a so-called remedy for this affection. They are made of gold, silver, lead, wood, cork, sponge, gum-elastic, or of linen, in the form of a sack, and filled with some medicinal substance. In form they are round or oval, or in the form of a ring with a central opening, or like an hour-glass, "*en bondon*, or *en bilboquet*." They all have for their object the mechanical support of the uterus, either from below, as in the pessary *en bilboquet*, or by dilating the vagina and making pressure on the bladder and rectum, and being supported by these organs, as in the pessary *en bondon*.

715. That this method of relieving prolapse of the uterus is merely palliative, and though in some exceptional cases successful, through an irritation or inflammation of the vagina, occasioned by their use, which has caused contraction of that canal, yet that, in the majority of cases, it has aggravated the diseased condition of the structures supporting the uterus, I think can be fully proved.* The use of a pessary of sufficient size to support the

* Dr. Meigs' views, appended as a note to his translation of Colombat on the Diseases of Females, will be found to be correct in every particular. He says:

"I take advantage of the close of this section to make a few remarks on the subject of the pessary, and particularly on the pessary as used in this city; and, in the first place, I must express my conviction that great abuses are to be met with in the prescription and use of this instrument, while a great many persons are restored to health, and many preserve a tolerable state of health by their use, who, but for such aid, would become irremediably diseased, or pass a long life of suffering. Many objections have been cited in the preceding pages, by our author, to the use, or rather to the abuse of this instrument, and the very natural and, perhaps, praiseworthy opposition to their employment, arising from considerations of a merely moral nature, ought to be encouraged, as a means of preventing their unnecessary use as means of treatment in cases not at all calculated to be benefited by them. It seems to me that, in view of the nature of the support by means of which the womb retains its natural situation in the pelvis, every case of prolapsion or procidentia of the womb, ought to be regarded as an affection of the vagina, and that the indication of cure confines itself to the restoration of the vagina, and not of the womb, as the pathological object.

"The abdominal cavity is terminated above by the concave of the diaphragm

uterus, will invariably increase the dilatation of the vagina, and the lax condition of its walls, the very thing we wish to avoid. As we have already seen, the vaginal walls in a normal condition are in direct apposition, being compressed together by the rectum behind and the bladder in front, and any thing that will cause a deviation from this normal position, will increase the existing debility. The pressure of a pessary not only causes a dilatation of the vagina, but it also exerts an injurious compression on the bladder and rectum, these organs in a normal condition, being only separated by the thickness of the vaginal walls. It likewise, by taking off the pressure of the pelvic and abdominal contents upon the

and inferiorly by the floor of the pelvis, consisting of tissues of combined muscles, fasciæ, cellular tela and skin. In the act of parturition, and in that of defecation, the inferior portion of the abdominal cavity is depressed by the action of the diaphragm and abdominal muscles, which press the movable contents toward the outlet, and depress it. In this act the whole perineum descends more or less considerably, and after the completion of the act returns to its natural position, partly by means of its contractility of texture, and partly by the act of the levator-ani muscles—muscles that, in almost every instance of this return, are put into voluntary activity.

“With the progress of age, and under the debilitating powers of disease, the perineal terminus of the abdominal cavity grows less and less able to resist the antagonization of the diaphragm and abdominal muscles; so that, in such circumstances, the perineum becomes relaxed, and is found to be nearly horizontal or quite even with the tuber ischii; whereas, in young and healthy persons it is drawn upward so as to make a deep sulcus above the level of those tuberosities.

“In all persons possessed of very powerful levators-ani, the extremity of the rectum will be highly retracted within the pelvis, and retained there by the steady and normal tension of those muscles; but in those in whom these levators are thin and weak, the anus is found lower and on a level with the tubera, or even projecting below them. This case may sometimes be detected in young children exhausted with the long tenesmus of summer complaint; in adults, under protracted diarrhea, dysentery, and other enfeebling maladies, as well as in women whose constitutions are broken up by frequent parturition.

“Now let it be remembered that the levator-ani is a levator vaginæ, and, in the same sense, a levator uteri; and that in all persons in whom these muscles have become extenuated and weak, there will be a greater or less disposition to, or actual falling of the womb; and that such a condition is incompatible with comfortable sensations in the muscles in question. Even the constrictor vaginæ muscle is, to a certain degree, a part of the muscular material in question, since the levators and sphincters, both of the anus and vagina, have their fibers more or less blended, and there is a consent in their actions. The levators relax

perineal muscles, causes a loss of tone and energy in these, the true supports of the pelvic contents.

716. Dr. Hamilton urges the following objections to the use of pessaries: "1st. They can only act as palliatives, whatever may be the degree of the disease. 2d. They necessarily keep up a continued irritation in the passage, and of course a mucous discharge from the vagina. 3d. Unless properly adapted, they make injurious pressure on the contents of the pelvis. 4th. If not frequently taken out and cleaned, they become incrusted with calcareous matter, which proves highly irritating. 5th. They subject the patient to the charge of the medical attendant for life.

coincidentally with the relaxation of the sphincter ani, and their contractile efforts absolutely coincide.

"Seeing now that the uterus depends for its place in the plane of the pelvic cavity, solely upon the place of the vagina, and that the latter is indissolubly connected with the bowel by means of the recto-vaginal septum, it appears clearly that all cases of prolapsion have also a clear connection with a certain morbid condition of the levator muscles. The same thing happens in the case of falling of the palate or uvula, which is clearly a muscular weakness, arising from an inflammation, either acute or chronic, of the substance of the palate or uvula.

"It hence appears, that in cases of prolapsus uteri, I suppose, that one great object to be held in view is the restoration to the levators of their lost or diminished contractility.

"Doubtless, cases of prolapsion are most to be feared after long, tedious, or instrumental labors—labors where, from rigidity or bad proportion, the child has remained many hours within the pelvic cavity, jamming the muscular and other tissues within, against the sides of the ischia, whose bony walls on the one hand contuse these muscles, while the head on the other is equally capable of affecting them with contusion.

"After such a labor, a woman is very apt to get up from her lying-in with weakened levators, with the rectum feebly supported, and the uterus consequently lower than it ought to be; in fact, very few women are to be met with in whom, after giving birth to one or two children, the womb is not found very low in the pelvis. If she early becomes a widow, or at an early age ceases to bear children, the tension of these tissues is at length restored to the womb, and the whole perineum, indeed, rises again, until the approach of age is evinced by the last and permanent fall of the perineum with all the contents of the pelvis.

"Under this view, how necessary does it seem that such patients should avoid all the causes of tenesmus, such as costiveness on the one hand, and drastic or other harsh cathartics on the other, pessaries of a bad construction, or of too large a size, strangury, debilitating discharges of leucorrhea, and, in short, whatever might serve to promote the descent of the perineal texture, the descent of

And lastly. Cases from time to time occur, where, from laceration of the perineum, etc., no ordinary pessary can be retained."

717. Having thus considered the three most common means of treating this displacement, and seeing that these can not be depended on to effect a radical cure of the disease, we will now consider those measures which have for their object the restoration of the natural support of the parts.

718. Our first object in a case of this kind, is to restore the general health of the patient, which is more or less affected, and thus indirectly give tone and vigor to the perineal structures. To this end, any dyscrasia to which the patient is subject, should be corrected, the bowels kept regular, and the urinary and cutaneous secretions kept free. The patient should be placed upon the use of the vegetable tonics and iron, and stimulants if they are needed; she should be advised to take plenty of exercise in the

which is incompatible with a due elevation of the organs whose support in situ naturally absolutely depends upon them.

"I beg leave to remark that, in pursuance of a plan of treatment by rest in a horizontal posture very long continued, the muscular force of the patient is not unapt to be exhausted, and that it is not unusual for persons subjected to such treatment, to rise from a confinement to the bed of several months duration, not at all amended in health, and, consequently, greatly disappointed, if not injured by the treatment. In such patients, a method calculated to invigorate and enhance the muscular energies would be far more likely to produce a cure which would coincide with a rise or elevation of the perineum. Hence, I have, in many instances, found my patients to recover perfectly, when I have counseled them to take exercise, to be much in the air and light, to live upon a nutritious diet, to take wine and malt liquor, and to disregard, as far as possible, the painful or annoying sensations proceeding from the prolapsed state of the womb; assuring them that, probably, in proportion as their general health should improve, so would the local disorders, under which they suffered, gradually lessen and finally disappear. I have seen a lady this day, who, at the age of forty-nine years, informs me that she has scarcely been a day or night without a pessary for fourteen years past, an instrument for which she has not the least occasion, and perhaps never has had.

"In making these remarks, I desire to apply them to cases where the use of the pessary is a question of doubt, for, beyond dispute, there are many women who can enjoy neither comfort nor health without the aid of these remedies, which, as our author states, are sanctioned by the common consent of the profession for ages past."

open air, and to live upon a nutritious but digestible diet. Strict attention should be paid to the state of the skin, using the bath at least once a day, and accompanying it with considerable friction. As the general health improves, in a majority of cases, an equal improvement will be observed in the local disease. Dr. Meigs, in reference to constitutional treatment, remarks: "I have, in many instances, found my patients to recover perfectly, when I have counseled them to take exercise, to be much in the air and light, to live upon a nutritious diet, to take wine and malt liquor, and to disregard as far as possible, the painful or annoying sensations proceeding from the prolapsed state of the womb; assuring them, that probably in proportion as their general health improved, so would the local disorders under which they suffered, gradually lessen and disappear."

719. In regard to local measures, our first attention should be directed to the removal of any disease of the vagina or uterus that may exist. Thus, if there be a chronic inflammation of the mucous membrane of the vagina, it should be removed in the manner already described, when treating of that disease. In the first degree of prolapse, many cases will present themselves in which the displacement was caused by hypertrophy of the cervix; the removal of this diseased condition will be followed by a cure of the displacement. After the removal of these diseases, or if the prolapse existed without them, the local applications should entirely consist of cold water, applied to the lower portion of the abdomen and pelvis with the hand, and used as a vaginal injection, with a pump-syringe.

720. To increase the tone and strength of the abdominal and perineal muscles, they should be exercised by compressing and kneading them with the hand. Having reduced the uterus as much as possible, the patient lying in a horizontal position, the nurse should be directed to manipulate or knead the muscles of the perineum and abdomen with the hand, and this should be repeated once or twice a day. This exercise of the muscles I have found of greater benefit than any other measure, the condition of the patient being sensibly improved by it in a few days.

721. Dr. Keith informs me that he and others have used the galvanic battery in these cases with marked advantage, in fact, he considers it much preferable to any other mode of treatment. He applies the positive pole of the battery to the lumbar region of the spinal cord, the negative pole being introduced into the vagina. Under its influence he has observed the vagina, which was so lax as to permit the uterus to pass down with very little resistance, become so contracted, that the uterus was retained in its normal position, though the patient was told to run up and down stairs, jump, cough, etc. He has likewise noticed, that by taking the negative pole in one hand, and introducing the index-finger of the other to the os uteri, the current passing through him, that the uterus would be elevated and drawn away from the finger. He further states, that the benefit derived in this manner is permanent, the muscles being stimulated and invigorated by each application, will in a short time be able to afford a proper degree of support.

722. The reduction of the displaced uterus is generally very easy, in the first or second stages, when unaccompanied with any complications. The patient lying in a horizontal position, with her hips elevated, and the thighs flexed upon the abdomen, the physician, by the introduction of one or two fingers to the os uteri, can readily replace it; in fact, in many cases it will itself assume its natural position.

723. In complete prolapsus the reduction is sometimes attended with much difficulty. In this case, according to M. Colombat, it is proper, before proceeding to the reposition, that the patient should empty the bladder and rectum, either spontaneously or by means of the catheter and a common enema. Provided the uterine tumor, as frequently happens, should be found painful and sore from the action of the air, the urine, or the friction of the clothing, emollient poultices ought to be applied to it, and the swelling should be reduced by general remedies, such as fomentations, baths, diluent drinks, laxatives, etc. After the parts have been brought into a condition more favorable for the reposition, the woman should be directed to lie down in a position more inclined even than that recommended in incomplete prolapsus;

the physician, after anointing his fingers, as well as the tumor itself, with cerate or oil, should seize it with his right hand, and, giving a few rotary movements, in a gentle manner, and then elevating and depressing it by turns, should press it backward into the pelvis, following the direction of the axis of the inferior strait, meanwhile using the fingers of the other hand at the labia, to facilitate the return of the womb into the body.

724. To support the uterus during the treatment for the radical cure of the disease, a perineal supporter (Fig. 34-5,) should be constantly worn by the patient through the day, when she is in an upright position, and taking exercise. This supporter consists of a well-fitted abdominal bandage or jacket, furnished with whale-bones, to keep it from wrinkling, and made so that it will give a constant and steady support to the lower and anterior portion of the abdomen ; from this jacket extends two stout and inelastic bands, which pass between the thighs, and button or buckle on the opposite part of the bandage ; immediately under the perineum, where these straps cross, a perineal pad is attached, which presses upward against the perineum, and gives the requisite



FIG. 34.

PERINEAL SUPPORTERS.

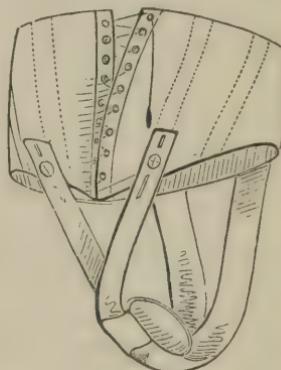


FIG. 35.

degree of support. This perineal supporter has been used by Dr. Brown and others, and is preferred to any other means of support. In my practice I use it altogether, and prefer it to any and

all contrivances which have been recommended for the same purpose.

725. In those cases where the prolapsus arises from rupture of the perineum, the operation recommended for this difficulty should be resorted to, and with the restoration of the perineum the uterus will assume its normal position.

726. In cases in which the perineum is thin and much weakened, its restoration to a normal thickness and strength, by a surgical operation, will effectually remove the displacement. These cases are the hardest to cure; in fact, where the perineum is greatly weakened, as it is in some rare instances, this operation is the only sure means of relief. The principle of the operation is the same as in prolapsus vagina, to increase the thickness of the perineum, and contract the size of the vagina. As the operation is nearly the same as for vaginal prolapse, the reader is referred to that for the description.

RETROVERSION OF THE UTERUS.

727. This displacement, though not of such common occurrence as prolapsus uteri, is still frequently met with, both in the pregnant and in the non-pregnant female. It consists in a displacement of the fundus uteri backward, the cervix being thrown forward against the bladder, the entire organ assuming, more or less, a transverse position in the pelvis. It will be recollected, that in its normal condition the uterus corresponds in direction with the axis of the superior strait, or a line drawn from the apex of the coccyx to the umbilicus; it is not, therefore, situated perpendicularly in the axis of the body, but is normally anteverted. The vagina, on the contrary, is situated in the direction of the axis of the inferior strait or outlet of the pelvis, and, consequently, the union of the two forms an obtuse angle. The uterus is said to be retroverted when its direction corresponds with the direction of the vagina, or when the angle formed by the two is posterior instead of anterior, the displacement varying in degree from the slight form first spoken of, to that in which the organ assumes a transverse position in the pelvis, or in some rare cases, where the fundus descend to a lower level than the cervix.

728. *Retroflexion* is but another form of the same disease, and practically considered, it does not need a separate consideration. In this form of the displacement the uterus is bent upon itself.

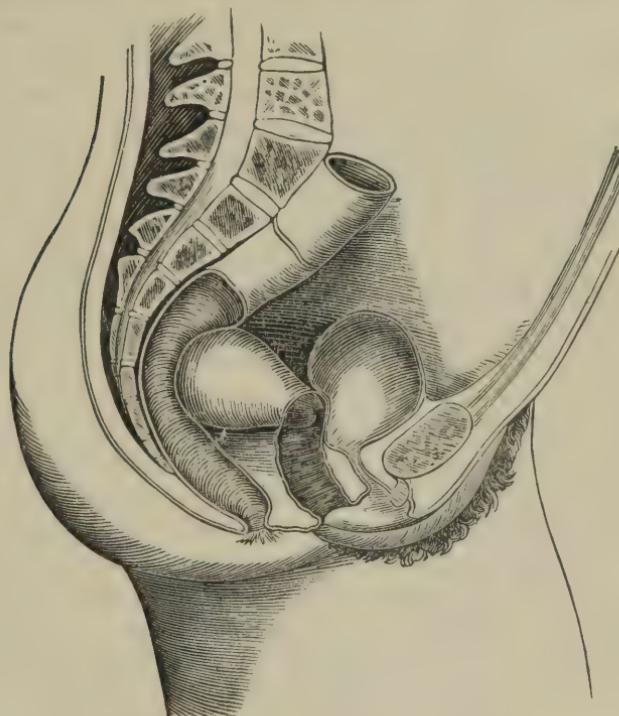


FIG. 36.—RETROVERSION OF THE UTERUS.

like a retort, the fundus being thrown backward against the rectum, the cervix retaining its natural position in the pelvis. In regard to this displacement, Dr. Bennet says: "If the neck of the uterus be healthy and soft, the body of the uterus, in falling, does not alter the position of the cervix, and a bend or angle takes place between the two, the concavity of which is backward and downward. On the contrary, if the cervix is enlarged and indurated, and the induration extends into the body of the uterus, the cervix is thrown up toward the symphysis pubis, and no curvature is observed." Though this difference is found to exist

in practice, yet it makes little or no difference in the symptoms developed by the disease, nor in the measures adopted for its relief; the distinction, therefore, is practically useless.

729. *Causes.*—The proximate causes of this displacement are, a laxity and weakness of the uterine supports, or an increased weight of the fundus, posterior wall, or even of the entire uterus, or both. Thus, frequent child-bearing, abortions, chronic inflammation of the genital mucous membrane, etc., will give rise to laxity of the tissues, while inflammation, by producing hypertrophy, congestion, fibrous tumors, etc., gives the increased weight to the organ. In the early period of pregnancy, the most frequent cause of retroversion is a long-continued distention of the bladder, which either gradually, or under the influence of a sudden shock or impulse, as by a fall, coughing, vomiting, etc., pushes the uterus downward and backward into the hollow of the sacrum.

730. *Symptoms.*—In some cases of retroversion of the unimpregnated uterus, says Dr. Simpson, more especially when the displacement is chronic, and the pelvis large, as in some other forms of uterine disease and of pregnancy, few or no marked functional or sympathetic symptoms, either local or general, are present; while, in other instances, the attendant functional derangements and irritations are excessively severe and distressing. And in this, as in other uterine affections, between these two extremes we may meet with every shade of difference.

731. “In retroversion, as in other morbid conditions and diseases of the unimpregnated uterus, the accompanying sympathetic derangements or symptoms are, when they are well marked, more or less perfect imitations of the secondary phenomena of pregnancy. Dyspeptic and hysterical symptoms are sometimes present, with local neuralgic pains in the mammae, in some portions of the vertebral column, or, what is still more frequent, in the parieties of the abdomen or chest, and, more especially, in a limited spot beneath the left mamma. The displaced position of the uterus often gives rise to mechanical irritations and symptoms of the same kind as if the organ was morbidly enlarged. Constipation and impeded defecation are frequent results, partly from the

fundus of the displaced uterus physically compressing the caliber of the rectum, and partly from its producing a functional inability to expel the feculent contents of the bowel through the lowest part of the canal. Occasionally the bowel is irritated, and there are discharged from it, from time to time, quantities of mucous or fibrinous-like effusions. The bladder frequently suffers from dysuria or retention, and, much more rarely, I have seen a degree of incontinence, especially where the urine has become phosphatic, from the want of power, in some cases, of completely emptying the bladder. Symptoms of weight, tension, and bearing down in the regions of the uterus and rectum, with dragging at the loins and in the region of the uterine ligaments, are very common. Pains often stretch down one or both of the lower extremities. Occasionally there is an inability to bear carriage-exercise, and walking and standing speedily produce fatigue. In a few cases I have known the patients to find themselves forced to remain almost constantly in the horizontal position, from the intense and overpowering feeling of pressure and malaise which the erect posture always brought on, and the power of standing and progression restored by the spontaneous or artificial reposition of the uterus. In general, all the symptoms, local and constitutional, which I have alluded to, are aggravated, more or less, by exercise in the erect position; and they are more particularly liable to be increased in their intensity when the uterus becomes periodically congested and heavier, at the recurrence of each menstrual period."

732. The menstrual function, in some cases, is not altered at all, continuing regular both as to time, duration, and quantity, but in other cases it may be affected most oppositely and variously. Sometimes the secretion is suppressed, at others there is dysmenorrhea, and at others menorrhagia. In some cases the natural mucous secretion is not increased, but generally there is a degree of irritation or sub-acute inflammation, which gives rise to a more or less abundant leucorrhæal discharge. It is said that when a female with a retroverted uterus becomes pregnant, abortion is apt to take place. Many cases, however, are reported, in which utero-gestation went on to full term, the position of the

uterus becoming spontaneously rectified by the consequent enlargement of the uterus; again, some rare instances have been observed, when the occurrence of impregnation increased the displacement. Very often the existence of this displacement is a cause of sterility, conception having taken place when the displacement was rectified.

733. When the impregnated uterus is retroverted, the displacement always occurs while the organ still remains within the cavity of the pelvis, or before the eighteenth week. It is generally not indicated by any marked change in the condition of the patient, and she generally remains ignorant of her condition until an attempt is made to relieve the bladder. On attempting to pass the urine, a stoppage will be observed in it, and sometimes even the most straining efforts are ineffectual in emptying the bladder in the least. "I wish it to be understood, however," says Dr. Blundell, "and it is very important that this should be known, that, in the retroversion of pregnancy, you have not always, nor, I think, generally, the *complete retentions of urine*; for, often when the uterus is retroverted, the retention is partial. Day after day the fluid is sparingly emitted, but never in such quantity as to empty the bladder completely, till by and by the secretions begin to steal away involuntarily, or she may have strong efforts to pass the urine, even against her will, and with every effort a small gush only may be produced, or there may be a continual dripping; and yet, notwithstanding all this, an accumulation of water may go on very gradually increasing, so that several pints, nay several quarts, may be gradually accumulated." The pressure exerted by the fundus of the organ upon the rectum, gives rise to a constant desire for defecation, even when the bowels are empty, and to great difficulty in evacuating them.

734. Should these symptoms pass unrelieved, says Dr. Tyler Smith, the bladder becomes enormously distended, and it is sometimes ruptured mechanically, or its coats inflame and ulcerate, allowing the urine to escape into the peritoneal cavity, and the patient sinks or dies of peritonitis. If the uterus can not be replaced, and the water is occasionally and with difficulty drawn off, the bladder gradually relaxes and elongates, and its mucous

membrane becomes diseased; muco-purulent, ammoniacal, and bloody urine is passed, and the kidneys may become diseased, by the effects of the backward pressure of the urine. The structures between the bladder and the uterus may become inflamed, and the patient be destroyed by irritative fever. In some instances all these mischiefs are averted or modified by the occurrence of spontaneous abortion. In others, the displacement continues to the fifth or sixth month, without destroying the patient, and it has been known to go on to the full term without causing a fatal result.

735. *Diagnosis.*—The general symptoms already named, though they point to the uterus as the seat of the disease, are not sufficient to enable us to determine its character, and here, as in most other uterine diseases, our main dependence is placed on the results of a physical examination.

736. By making an examination per vaginam we will feel a solid tumor at the posterior part of the vagina, smooth and roundish on its surface, and more or less sensitive to pressure. Anterior to this tumor may be felt the cervix uteri, either thrown forward and upward as in *retroversion*, or maintaining its usual position as in *retroflexion*. By passing the finger backward along the cervix, the connection between it and the posterior projection may in general be easily made out. When the displacement is recent, and the uterus not enlarged, the diagnosis may often be greatly assisted by moving the uterus, elevating its fundus by a finger introduced into the rectum, and drawing the cervix downward, by a finger or some suitable instrument introduced into the vagina; in this manner the connection between the cervix and the posterior projection may be very easily determined.

737. The presence of the symptoms named, and the results of a tactile examination, will always be sufficient to detect the displacement in the impregnated uterus. But we have a more certain means of diagnosis in retroversion of the unimpregnated uterus by means of the uterine sound. In the natural position of the organ, the uterine sound is readily introduced with its concavity directed forward, the point of the instrument being directed toward the umbilicus; but, in this displacement, the instrument can not be introduced in that manner, as it is resisted

by the changed position of the organ. By turning the concavity of the instrument backward, however, so that its point will be directed toward the hollow of the sacrum, it will readily pass. This changed position of the direction of the uterine cavity is *positive evidence* of the character of the displacement. But we may make the examination still more complete and accurate, by ascertaining, by a vaginal or rectal examination, that the point of the bougie is lodged in the center of the tumor; showing that it is the displaced fundus, and after this, by gently turning the instrument round so that its concavity will look toward the symphysis pubis, the uterus will be replaced, and the posterior tumor can no longer be felt.

738. *Treatment.*—The replacement of the uterus, is obviously the first thing to be accomplished in all cases, both in the pregnant and in the non-pregnant female. As the means employed to effect this, however, differ in the two cases, we will have to consider them separately.

739. In retroversion of the unimpregnated uterus, there is very frequently a chronic inflammation, or congestion of the organ, which perhaps has been the cause of the displacement. This as well as any other disease of the uterus predisposing to displacement, must be subdued before the organ will retain its position when replaced. A very good means of replacing the organ is to introduce one or two fingers into the vagina, and pass them up between the cervix uteri and the rectum, pushing up the posterior vaginal wall, and thus elevate the fundus of the organ, at the same time the cervix may be drawn down by a small instrument made like one blade of the forceps, or any thing else that will answer the purpose. Another, and perhaps the best means of replacing the uterus, is by means of the uterine sound. Having introduced the sound into the cavity of the uterus, if it is gently turned so that the concavity of the instrument will look toward the symphysis pubis, the retroverted organ will be carried into its natural position by the changed position of the point of the instrument. This use of the uterine sound generally occasions no pain, if care be used; but if handled roughly, much pain and mischief may be the result.

739. Before the replacement is effected, the bladder and rectum should be emptied, and after the replacement it is of the utmost importance that the urine should be frequently passed, never allowing the bladder to become in the least distended. This part of the treatment is of the greatest importance, for if the bladder is allowed to become distended, it will almost invariably reproduce prolapse.

740. Several mechanical contrivances have been used and recommended to the profession to retain the uterus in its position. To these instruments, however, the same objections hold good that were urged against the use of pessaries in prolapsus uteri, with but one exception, Dr. Simpson's intra-uterine pessary. This last instrument supports the uterus by a stem, which passes into the uterine cavity, the cervix resting upon a bulb attached to the stem, the entire instrument being supported from below. Dr. Simpson says, that in his practice but very little irritation has followed their use, and in no case have they produced any serious results. But from the known sensibility of the mucous membrane lining the cavity of the uterus, we should suppose that this intra-uterine stem would not be so readily tolerated. Dr. Ashwell mentions some cases in which great suffering resulted from its use, and Dr. Oldham mentions others where death was the consequence. Dr. Churchill states that two cases have been mentioned to him, in which the instrument was introduced, but it occasioned such agony, that it had to be withdrawn in both, within twenty-four hours. "Upon the whole, therefore, I should feel great hesitation in recommending such an instrument, although it must be admitted that some contrivance for this purpose is very desirable. If it be used, the patient should be kept very quiet, very carefully watched, and the instrument removed if it occasion any pain."

741. There is no doubt in my mind, but what if the inflammation and enlargement or the congestion of the uterus be first removed, and the measures recommended in prolapsus uteri, for the restoration of the general health, and the tone and strength of the perineal structures be followed, that there never will be any necessity for direct mechanical support, "the perineal sup-

porter being all that is required," and this only during the general treatment.

742. Dr. Meigs considers that in most of the instances of retroversion in the early months of pregnancy, the displacement is attributable to a distended state of the bladder, he says: "A female riding in a carriage, or placed in such a situation that she can not withdraw from the company without being suspected of a desire to urinate, will allow the bladder to fill almost to bursting; and if she be pregnant about three months, she will scarcely fail to have retroversion of the womb. When at last she obtains an opportunity to evacuate the bladder, she finds she has a partial or total suppression of urine."

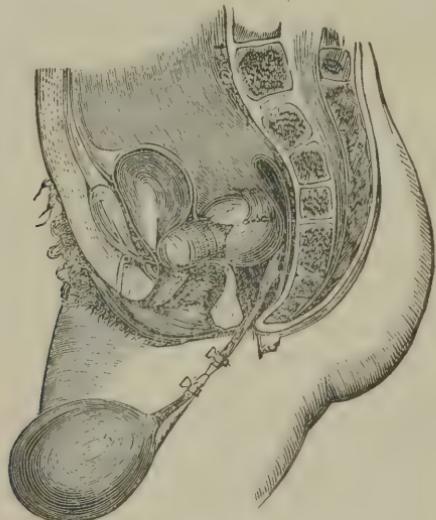


FIG. 37.—AIR PESSARY OF M. GARIEL.

743. In regard to the treatment of these cases, he says: "Having succeeded in drawing off the water, the patient, if necessary, should have a copious enema, in order to unload the rectum, which, if replete with fecal matters, might offer considerable obstacles to the success of our attempt. In the next place, we ought to endeavor to raise the fundus—the patient lying on her left side—by pressing the bas-fond of the womb, which can be felt

through the hinder surface of the vagina upward, with the fingers, so as to lift the whole mass in a direction parallel with the axis of

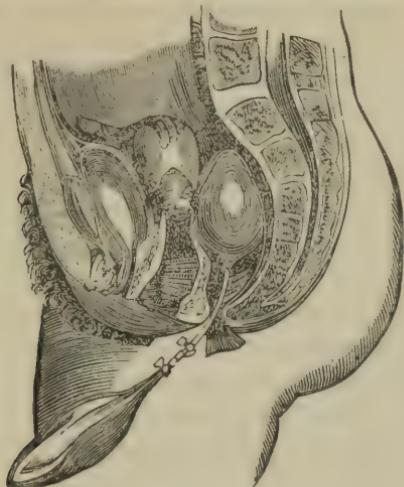


FIG. 38.

the brim. The cervix uteri is tied to the more anterior parts of the pelvis by the vagina and the vagino-vesical septum, so that if we carry the mass considerably upward, it must be by tilting the fundus in that direction. Attempts of this kind will not always succeed. Where they fail a finger may be passed into the rectum, the fore-finger of the left hand, if the woman is on her left side, and of the right hand, if she be upon her back. Before the finger has passed very far, it meets with the fundus uteri, which presses upon the canal of the intestine; in this situation we have far more power to move the womb than when the effort is made only from the vagina. Pushing gently and steadily upward, we find the mass gradually to recede, until at length the fundus, liberated from its restraint, suddenly emerges, with a sort of jerk, from under the promontory, from which instant the woman is cured."

744. Sometimes much difficulty will be experienced in introducing the catheter, often indeed the common female catheter can not be used; in this case an elastic male catheter should be used, and the uterus may be pressed backward, so as to liberate the urethra until the catheter is passed.

745. If the means above spoken of should fail to replace the uterus, we may resort to the use of the instruments of M. Gariel, or of Dr. Henry Bond of Philadelphia. "M. Gariel's instrument consists of a dilatable air pessary, terminating in a tube, and an air reservoir, with small taps affixed to each. After immersion in warm water, the collapsed pessary is passed into the rectum, behind the uterus, by means of a probe. The air reservoir is then fitted to the tube of the pessary, the taps are opened, and, by the pressure of the hand, the air contained in the reservoir is transferred to the pessary, so as to lift the uterus out of the hollow of the sacrum."

746. Dr. Bond's instrument, as described by Dr. Meigs, "consists of two arcs of circles of different radii; the inner one is terminated by a small oval piece of ivory; the outer terminates in a small ivory ball. The exterior arc is formed at its lower extremity into a plate-piece, in which is a mortise; to the end of this plate-piece is attached an ivory handle, by which it may be conveniently held. The inner or smaller piece is attached to a sliding-piece, also mortised, and overlapping by its edges the mor-

tised plate-piece, and secured by a clamp or pinch traversing the mortises, and fastened or loosened by turning the thumb-piece. If the thumb-piece be unscrewed, the clamp may be turned lengthwise, and the arcs are then easily separated. In order to use the instrument, the arcs should first be separated, and the ivory-ball on the largest arc introduced into the rectum, while the oval one on the smaller arc should be introduced into the vagina. By sliding the smaller arc upward, the two balls can be placed opposite to each other; or the vaginal arc can be set a quarter of an inch, a half inch, or an inch lower down than the one

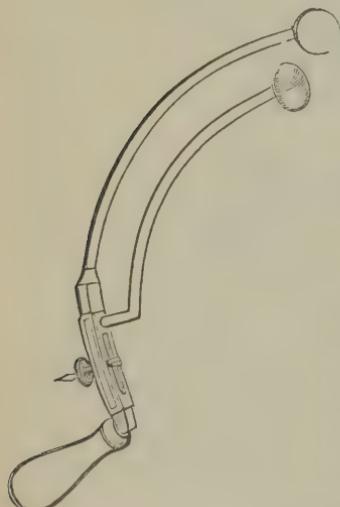


FIG. 39.—INSTRUMENT OF DR. BOND.

that is in the rectum. Upon being adjusted, and firmly secured by turning the thumb-piece, it is manifest that the two balls can not be separated from each other, and that, if they be moved upward, parallel with the curve of the sacrum to the height of the promontory, they must carry the retroverted uterus before them, and thus serve very effectually and easily to reposit the dislocated organ."

747. In cases in which all measures are ineffectual in replacing the retroverted uterus, two methods of procedure are still open. First, to leave the case to nature, merely palliating any severe symptoms that may arise, but carefully keeping the bladder and rectum empty, and wait until the uterus, by its increased size, has elevated itself out of the pelvis, or until labor spontaneously occurs. Or, secondly, we may induce premature labor by puncturing the membranes through the os, or by tapping the uterus through the vagina and rectum. Many objections are urged against the first of these measures, as, the very severe symptoms which arise during this condition, and which often prove fatal, and the little likelihood of a favorable termination in the manner spoken of. If, however, it be adopted, it would be well to follow the advice of Denman, "to allow but little liquid, keeping the bladder thoroughly emptied, by the use of the catheter, two or three times a day, and in maintaining, for hours together, an inverted position of the pelvis, by placing the patient on her knees and elbows." Dr. Ashwell says:—"It is not always easy to puncture the membranes through the os, owing to the elevated position of the cervix; and, if we fail in repeated attempts to accomplish this purpose, tapping the uterus is our only resource. The extreme symptoms will not often allow us, even were we disposed, to content ourselves with drawing off the water and palliating symptoms to the time of labor."

748. In some cases where the pelvis is large, and there is great laxity of the tissues, it may be proper to confine the patient to the horizontal position, until the uterus has arisen out of the cavity of the pelvis, to prevent a re-displacement of the organ. These cases, however, are fortunately rare, in the most of instances, keeping the bladder emptied of urine, and attention

to the general health will be found all-sufficient to prevent displacement.

ANTEVERSION OF THE UTERUS.

749. This displacement is the opposite of the one just described, the fundus being carried forward toward the symphysis pubis, and the cervix uteri thrown backward against the rectum. It is the least frequent of the uterine mal-positions, and is very rarely met with, and only in the unimpregnated condition. In this displacement we have two varieties, the same as in retroversion, anteversion and anteflexion; in this last, the uterus is

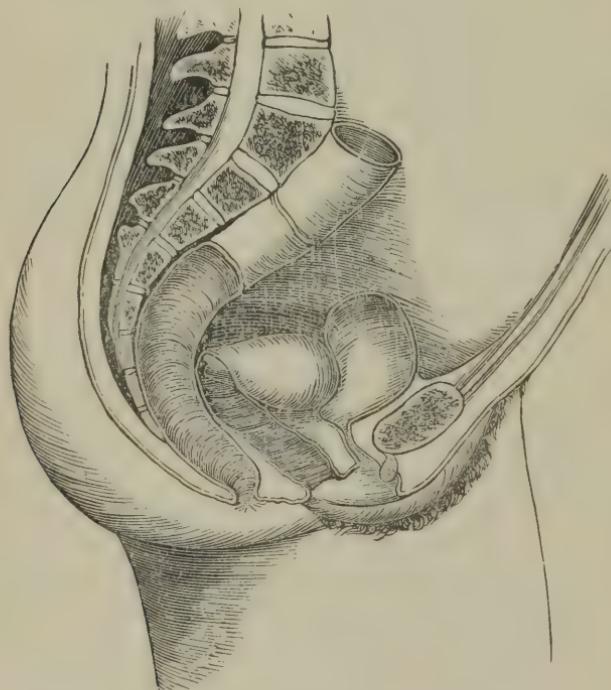


FIG. 40.—ANTEVERSION OF THE UTERUS.

bent at the junction of the cervix with the body of the organ, the fundus being displaced forward, while the cervix retains its

natural position, the angle formed looking forward and downward. This distinction, though noticed by most authors, is of very little importance, the treatment of the two conditions being exactly similar.

750. As has already been stated, in the normal condition of the parts, the uterus may be said to be slightly anteverted, the direction of the uterus corresponding with the axis of the superior strait. In this position, it rests anteriorly upon the bladder, and posteriorly it is in contact with the rectum. From this oblique position of the uterus in reference to the axis of the body, it is obvious that the bladder in a measure supports it, and that so long as the bladder is moderately distended, this accident may be considered impossible. When it does take place, the fundus uteri is directed toward the inner surface of the symphysis pubis, compressing the urethra, the entire organ being situated transversely across the pelvis.

751. *Causes.*—“For the production of anteflexion or anteversion,” says Dr. Churchill, “it is necessary that the fundus uteri should be rendered somewhat heavier than natural, compared with the inferior portion of the organ, or else, that a decided tilting forward should be occasioned by a force external to the uterus. This may be effected in the unimpregnated state by means of chronic enlargement of the anterior wall, by tumors growing from or imbedded in that part, by great congestion, etc. If the bladder be empty, and a sudden expulsive force be exerted at the same time, the uterus may be tilted over anteriorly, especially if the ligaments have been relaxed by previous pregnancies. Pregnancy, by increasing the weight of the fundus uteri, will so far fulfill one of the necessary conditions, but the displacement can only happen during the first two or three months. In some cases, it has been discovered that the first displacing power resulted from an accumulation of faeces high up in the rectum, which pressed forward the fundus uteri. In others, an attack of chronic metritis has rendered the womb top-heavy, or the same effect has been produced by a fibrous tumor, or by miscarriage. We must also suppose, I think, that some relaxation has taken place in the surrounding soft tissues. A blow, a fall, a shaking in an uneasy

carriage, obstinate diarrhea, have all been enumerated as exciting causes."

752. *Symptoms.*—The symptoms of this displacement are almost entirely mechanical, and similar to those produced by retroversion, though not in general so well marked. If the displacement comes on gradually, the symptoms will be so slight that it will be almost impossible to determine the precise time of their origin. The most common symptoms are a sense of fullness in the pelvis, of weight and bearing down low down behind the pubis, accompanied with weight and pain in the perineum and rectum, frequent desire to pass water, but great difficulty in doing so. In some cases where the displacement is suddenly produced, as by a fall, severe straining, as in coughing, vomiting, etc., the symptoms will be very marked, the pressure of the uterus against the urethra producing partial, or in some cases, complete retention of urine. These symptoms though indicating disease of the uterus, are not sufficient to point out the special affection, as they are common to most all the displacements, and to some other diseases of these organs.

753. If a vaginal examination be made at this time, the finger will come in contact with a tumor projecting into the anterior wall of the vagina, and the cervix will in anteversion be found thrown backward and pressing against the rectum. By passing the finger forward along the cervix, its connection with the anterior projection can readily be made out. The diagnosis may be assisted by elevating the fundus and depressing the cervix uteri with the fingers, or if there is no suspicion of pregnancy, the uterine sound may be used; if this is used, it will not pass in the usual direction, but the point will have to be directed much more forward, the handle being thrown backward toward the sacrum.

754. *Diagnosis.*—If the uterine sound be used, the diagnosis will be very easily made out. But without this, it may be distinguished from retroversion by the projecting tumor being in the anterior wall of the vagina, and the cervix uteri being thrown backward against the rectum. From pelvic tumors, by tracing the connection between the cervix and the fundus continuously across the pelvis, and by trying to replace the organ, the move-

ment showing the connection between the two; by the same means it may be distinguished from ovarian tumors. As showing the importance of a correct diagnosis, the case of Leveret might be cited. He confessed that the only case of anteversion he ever met with, he mistook for a stone in the bladder; and the mistake was only corrected by a *post-mortem* examination, the woman having died after the operation for stone.

755. *Treatment.*—The treatment of this displacement is much easier than that of retroversion; the distention of the bladder and efforts to evacuate the bowels, which tend to aggravate the displacement in retroversion, tend to replace the uterus in anteversion. To replace the uterus the patient should be placed upon her back, with the hips considerably elevated; the cervix should then be drawn down with the fore-finger of one hand, while the fundus uteri is pushed up with the other. The uterine sound may also be used to replace the uterus in the same manner that was recommended in retroversion; after the sound is introduced, by drawing its handle forward the fundus uteri will be carried up into its natural position. Prof. Godfrey recommends that the patients be placed on the side of the bed, with their heads and hands on the floor, with only the anterior parts of the thighs and legs resting on the bed. In this position, the intestines are drawn toward the diaphragm, the pelvis is consequently emptied, and the uterus, being so pressed upon, assumes its normal situation.

756. After the uterus has been replaced, the patient should be directed to keep the bladder partially distended for some time, to prevent a re-displacement. In other respects the treatment will be similar to that recommended in the other forms of displacement.

INVERSION OF THE UTERUS.

757. This displacement differs widely from prolapse, for while in both there is a descent or protrusion of the organ, in this the uterus is turned inside-out, the mucous membrane forming its external investment, while its cavity, which is directed upward and contains the fallopian tubes and ovaries, is lined by perito-

neum. Fortunately this is the rarest form of uterine displacement, as it is the most dangerous.

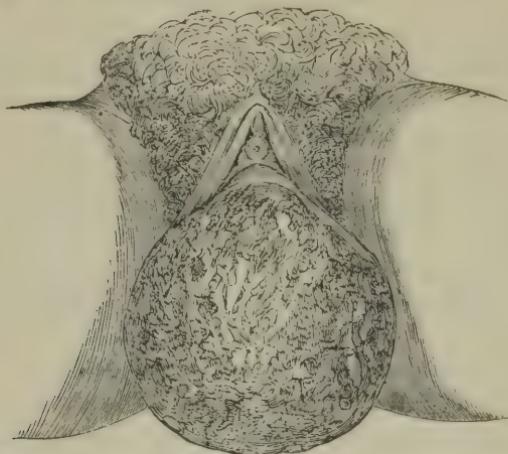


FIG. 41.—INVERSION OF THE UTERUS.

758. Inversion of the uterus most frequently occurs immediately or soon after labor, though in some rare instances it has been observed to occur in the unimpregnated organ. Boivin and Duges divide this affection into four degrees, each of which offer distinct characteristics for the diagnosis, prognosis and treatment. Each of these degrees may succeed to each other, either gradually or rapidly; each may also be permanent. The first degree consists in a simple depression of the fundus uteri, presenting a concave instead of a convex surface. In the second degree the body of the uterus being inverted, falls into the cavity of the cervix, and projects through the os uteri. In the third degree, the cervix is also inverted, the os uteri alone remaining uninverted. In the fourth degree, the entire uterus is inverted with partial inversion of the vagina, the organ being passed through the vulva, and hanging between the thighs.

759. *Causes.*—The causes producing this displacement, as enumerated by authors, are: hard or sudden traction on the umbilical cord, while the uterus is in a relaxed condition; violent pulling away of the placenta, while yet adherent to the uterus;

shortness of the umbilical cord, or coiling of the cord around the neck or body of the child, the labor being rapid; the presence of a polypus or other tumor attached to the uterine wall, which by its weight causes inversion, etc. In reference to the cause of this displacement, Dr. Tyler Smith says: "When inversion is referred to traction of the umbilical cord, whether in consequence of a short funis, the sudden birth of the fetus while the mother is in an upright position, or the attempts of the obstetrician to remove the placenta, it is always believed to depend on the merely mechanical force which is in operation. It is considered that the fundus uteri is dragged down mechanically through the os uteri and vagina, the uterus being supposed to be passive during the occurrence of the inversion. I have always been of the opinion, that, in the great majority of cases, the accident happens in consequence of irregular but active contractions of the uterus itself. No doubt cases may occur, in which inversion is produced by great tension upon the cord, while the placenta is firmly adherent to the fundus, and that all violent traction of the cord while the placenta is attached to the fundus is reprehensible. But when inversion is thus produced, there must be a consenting action of the uterus. This accident has sometimes happened when the hand has been introduced to peel off the placenta from the fundus, when the hand, placenta and uterus have all been forced out by the violence of the abnormal uterine action. All the facts connected with this catastrophe, show that it generally depends, not upon a passive, but an active condition of the organ. There are numerous points which prove that it may happen spontaneously, and apart from all interference on the part of the accoucheur. It may occur after the death of the mother, as the result of post-mortem contraction of the uterus. Numerous cases are on record, in which the uterus was found inverted, before any attempt whatever had been made to remove the placenta, and while the patient was lying quietly in bed. It has even been known to occur in the unimpregnated uterus. I have elsewhere insisted, that the unimpregnated and virgin uteri, particularly under irritation, possesses more motor-power than is generally attributed to it. The nulliparous organ has been known to invert itself, as the result of

spasmodic action, in long continued menorrhagia, or as the result of a small polypus or fibrous tumor in the cavity, or upon the peritoneal surface of the fundus. The more this subject is studied, the less will it be referred to merely mechanical derangements."

760. *Symptoms.*—The symptoms that arise from acute inversion, or inversion immediately after delivery, are always severe and alarming. It produces violent disturbance of the nervous system, and most generally copious hemorrhage. It is said, that the shock to the system and the hemorrhage, is sometimes as great in partial inversion, as when it is complete. The occurrence of the displacement is marked by sudden exhaustion, or sinking, the countenance becomes deadly pale, the pulse rapid, small and fluttering, the voice weak, nausea and vomiting occurs, etc. Dr. Tyler Smith states: "That in complete inversion, the hemorrhage is somewhat arrested by the os uteri acting as a torniquet to the uterus. But in either case, the shock to the system may be so great, as to cause death within a short time after the accident. The shock is so severe that a fatal result has ensued, when little blood was lost, and when, after a short time, the re-inversion of the uterus was affected." There is generally a very violent uterine contraction immediately preceding or accompanying the inversion, causing the patient to suspect a second child, and the passage of the inverted uterus along the vagina may serve to confirm her in this suspicion.

761. On making a vaginal examination, instead of finding the vagina free, the finger will come in contact with a tumor, globular in form, elastic, sensible, and with a rough and bleeding surface. This tumor may only partially fill the vagina, or it may pass down to the vulva, resting on the perineum, as in the forms of incomplete inversion spoken of; or it may have passed through the vulva, and be situated between the patient's thighs. If the placenta be still attached to it, it will increase the size of the tumor, and make the diagnosis much easier.

762. In the chronic form of the displacement, which is extremely rarely met with, the symptoms vary so much, that their enumeration would add nothing to our practical knowledge of the displace-

ment. In some cases reported, the inversion had been of years' standing, and yet the patients enjoyed a tolerable degree of health; and in none of these cases have the symptoms been more severe than in cases of complete prolapse, in fact, those described would answer as well for the one displacement as the other.

763. *Diagnosis.*—The diagnosis of this displacement is quite easy when the placenta is adherent to the inverted uterus; but when the placenta has been previously expelled, and nothing but the inverted uterus felt in the vagina, there are circumstances which make it quite hard to determine the character of the affection. Dr. Tyler Smith says: "In true inversion, the globular wall of the uterus is entirely absent from the hypogastrium, and a bleeding mass is found in the vagina, or protruding externally. This mass may, however, be simulated to some extent by a prolapsus or procidentia, occurring immediately after labor, or by the extrusion of a polypoid tumor after the expulsion of the placenta. In the case of the prolapsed or procident uterus, the diagnosis is easy, from the presence of the os uteri in the most depending part of the tumor. The distinction between polypus and inversion is not so easy, particularly when the polypus is of a fibrous character, and of the same density and structure as the walls of the uterus itself. In the case of polypus, there is the sensation of a solid mass; and in inversion, that of a hollow organ is conveyed to the finger. When punctured or pricked, the uterus is said to be much more sensitive to pain than the polypoid tumor. In complete inversion, the fossa round the base of the tumor is limited in extent, while in polypus the finger may be passed into the cavity of the organ, the pedicle can generally be felt, and there is the uterine tumor in the lower part of the abdomen. Great care is required in the diagnosis, as cases have occurred in which a polypus has been mistaken for an inverted uterus, and, in some instances, inversion has occurred without the accident having been recognized at all, until long after the time of labor."

764. *Treatment.*—Where the inversion has taken place immediately after delivery, the reposition of the uterus should be undertaken as soon as possible. It is laid down as a rule, that the sooner the reduction is attempted the easier it may be accom-

plished, on account of the rapidly increasing contraction of the os uteri, which, by impeding the circulation of the uterus, causes an increase in its size. Though the most favorable time for the reposition of the uterus is immediately after the accident, yet we should not consider the case hopeless, though it was of several days' standing. Many cases are reported in which the reduction was effected after from ten to twenty-four hours had elapsed, others after the lapse of from three days to twelve weeks, and one of fifteen months' standing, under the influence of chloroform.

765. In the incomplete form of inversion, two or three fingers of one hand may be introduced into the vagina, and the fundus uteri carried up through the os to its proper position. It would be well to follow the recommendation of Prof. Meigs, to make compression on the uterus only during the absence of contraction, and when the organ is somewhat flaccid. After the reposition of the organ, the fingers should not be withdrawn until after contractions have taken place, as otherwise the displacement might speedily recur.

766. In complete inversion the placenta should be detached, if it adheres, so as to reduce the bulk of the tumor, and it is also advised by some authors, to reduce the size of the uterus, as much as possible, by pressure. Then when contraction of the uterus is absent, and it is somewhat flaccid, the hand, well oiled, should be pressed against the center of the fundus so as to indent it, and then by moderate but sustained pressure, the fundus should be carried up through the body cervix and os uteri, to its proper position. Dr. Dewees and others recommend that the globe should be grasped with the hand, and the entire mass pushed upward into the pelvis. Dr. Meigs, in a note to M. Colombat, reports a case in which he tried the method of Dr. Dewees, but without the least success; he says: "After I had removed the after-birth, I found that the organ became alternately soft and rigid, just as happens after delivery in an ordinary labor; and I further observed that to handle it was to irritate its contractility and to harden it, which rendered it obdurate against every attempt at reduction. I was compelled, therefore, to do what M. Colombat so pointedly condemns: i.e., to wait until it became relaxed, and

then indent the fundus, and to drive that cone up through the cervix and os uteri, until I had carried my hand so high that the external organs contained my arm to not more than four or five inches below the elbow. I feel very confident that if, *in any case*, I could succeed in indenting a fundus uteri, and in bringing the cone up to the os uteri, I could always perfect the operation by gently pressing that cone against the ostium uteri, which, under a persevering maintenance of the pressure, would yield as readily as it does to a labor-pain, or to the cone of the hand, when introduced in cases of hour-glass contraction or spasm of the cervix under encysted or retained placenta. I dare recommend to the reader, therefore, to disregard the author's injunction, and to adopt the method which I have found successful."

767. After the uterus has been replaced, the hand should by no means be withdrawn, until the uterus has contracted to expel it, and until it is certain that the restoration is complete. It is recommended that the patient should be kept longer in the horizontal position than usual, and that she should lay with the pelvis somewhat elevated. The exhaustion and depression of the system should be removed by appropriate stimuli, and other measures, the same as if they had occurred from any other cause at this period.

768. Where the inversion has been of several days' standing, it would probably be advisable to place the patient under the influence of chloroform before attempting the reposition. In the case of M. Barrier, the displacement was of fifteen months' standing, and the reduction was accomplished under the influence of chloroform.

769. In cases of long standing, where reduction was impossible, it has been recommended to replace the uterus in the vagina and to sustain it there by means of the perineal supporter heretofore described. This, when it can be accomplished, would be decidedly the best treatment. Again, it is recommended to extirpate or remove the uterus, either by means of the ligature, or by the knife. This operation has proved successful in many cases, and in other cases it was less fortunate, the patient surviving the operation but a short time. If the ligature is employed, it should

be of stout silk or whip-cord, and applied around the tumor at its highest part; this should be gradually tightened as the patient may be able to bear it, until the tumor has sloughed off. Or after the ligature has been applied and tightened sufficiently to strangulate the viscus, it may be detached with the knife, cutting below the ligature.

770. The symptoms that arise from the application of the ligature are so severe, that many times it has to be loosened until they have passed off, and in some cases it has been followed by a fatal result. From the experiments that have been made with the "écraseur," I would suppose that this instrument would be more applicable in these cases than any other mode of extirpation that has heretofore been recommended, its operation being quick, not followed by hemorrhage, and accomplished while the patient is under the influence of chloroform.

CHAPTER XII.

DISEASES OF THE FALLOPIAN TUBES AND OVARIES.

771. The connection existing between the fallopian tubes and ovaries, and more especially their anatomical position, being situated closely together between the layers of the broad ligaments, and at the sides and somewhat posterior to the uterus, make it impossible to distinguish during life between the affections of the tubes and of the ovaries. Diseases of the tubes and ovaries, likewise, give rise to similar symptoms, and require the same treatment, so that for practical purposes no advantage can be gained by their separate consideration. Yet it may be interesting to the reader to point out the morbid processes to which the tubes are liable.

INFLAMMATION OF THE FALLOPIAN TUBES.

772. This is said to be a very common disease, and resembles, in all its features, inflammation of the mucous membrane of the uterus or internal metritis. In the non-puerperal state the inflammation is principally confined to the mucous membrane lining its cavity. It may arise from inflammation of the uterus extending by the continuity of its tissues, or from the same disease of the ovaries, and also it is said from acute suppression of the menses. This inflammation may be either acute or chronic, though the acute stage soon terminates in the chronic form.

773. Inflammation of the fallopian tube causes a thickening of the mucous membrane, which is tumefied, purple or slate colored; the tube is variously dilated, and its course tortuous. It also gives rise to an increased secretion of the natural mucus, which may be viscid and transparent, of a yellowish-white color, or a bluish-gray, or yellow purulent mucus. Acute inflammation at either extremity of the tube may give rise to an occlusion of its canal, and consequent sterility.

774. Occlusion of the extremities of the tubes may likewise give rise to that condition known as dropsy of the tubes. According to Prof. Rokitansky this dropsical condition of the tubes arises from the accumulation of the secretion of the mucous membrane, and from this accumulation, the tube, especially toward its fimbriated extremity, becomes so much distended, that that which before represented a tortuous or bent channel, is now converted into a simple sac. At other times, several saccular dilatations form between the separate angles and the projecting duplicatures of the tubal parieties, and give rise to an imperfectly loculated pouch, which, as in the former case, may contain blennorrhoid mucus, a puriform secretion, a true purulent inflammatory product, or, if the mucous membrane has become altered, fluids of another description. It is to be observed, that, as the dilatation proceeds, the texture of the mucous membrane is changed, being converted into a serous membrane; its secretion may be a thin watery, serous, colorless liquid, giving the tube the appearance of a transparent sero-fibrous bladder; or it may be variously colored,

yellowish, brown, blackish-green, and more thick and flocculent, consisting in part of inflammatory products on the internal surface of the membrane.

775. The hydroptic fallopian tube not unfrequently attains the size of a duck's or goose's egg, or even of a man's fist; although not a usual occurrence, still it is satisfactorily proved that the contents are sometimes discharged into the uterus, and thus carried off.

The symptoms and treatment of this disease will be the same as in ovaritis.

INFLAMMATION OF THE OVARIES.

776. Inflammation of the ovaries is a rare disease when occurring as a separate and isolated affection apart from the puerperal state; still it does occur sufficiently often to demand a separate consideration. Puerperal inflammation of the ovaries will be considered in the chapter on puerperal fever.

777. The seat of this inflammation, according to Prof. Rokitansky, is in the follicles or Graafian vesicles. He says, "The coats of a follicle are occasionally found injected, reddened, softened, and friable; the contents are opaque, flocculent, reddened by an admixture of blood, and not unfrequently purulent. This process, even in its slightest form, is followed by the destruction of the germ by means of the exudation; obliteration of the follicle soon ensues, and the first impulse is thus given to its conversion into a common serous cyst, which, in its turn, may grow into ovarian dropsy."

778. *Causes.*—Inflammation of the ovaries, it is said, may arise from a blow received in the iliac regions, from sudden suppression of the menses, etc. In other cases it may arise like inflammation of any other part of the uterine system,—from exposure to cold, to sudden changes of temperature, etc.

779. *Symptoms.*—In the acute form of the disease, the patient will complain of a dull, aching pain in one or both of the iliac regions, deeply seated, and accompanied with sensations of weight and heat, always aggravated by the erect posture, or by any sudden movement, and by defecation. These symptoms are sometimes preceded by a slight chill, followed by some fever, at other

times, the fever does not make its appearance until after the local symptoms are developed. The fever is never very high, and is generally intermittent; the paroxysms occurring generally in the afternoon or evening. Pressure over the inflamed ovary will generally increase the pain. M. Portal observes, "that he has often been with patients affected with ovaritis, who had experienced all the pathognomonic symptoms of inflammation of the uterus, but who, after the lapse of some time, and subsequently to their apparent recovery, became the subjects of fullness, and in fact of very great intumescence in one or both iliac regions, for which they took various remedies without advantage. On inspecting the bodies of such persons after death, he found the uterus perfectly healthy, while the ovary of one side, and in other cases of both sides, together with the ligament or ligaments, round and broad, of either or both sides, presented the appearance of great engorgement."

780. Inflammation of the ovaries always interferes more or less with the uterine functions, checking menstruation during its existence, and, if it goes on to produce structural changes, it may be the cause of sterility.

781. Acute inflammation of the ovaries may terminate in resolution, or in the chronic form of the disease, or in some rare cases it may terminate in suppuration; the pus being contained in but a single enlarged Graafian vesicle, or the entire ovary may be involved in the abscess. The termination in suppuration will be indicated by rigors, and a mitigation of the general symptoms; the pain is also lessened, and succeeded by a sensation of throbbing and increased weight; in these cases, there is also a considerable enlargement in the iliac region. The symptoms in this case somewhat resemble those of ovarian dropsy. The two diseases may be distinguished, says Boivin and Duges; "for, in dropsy, there is a more evident and uniform fluctuation, more considerable volume, higher ascent into the abdomen, pain and tenderness only at a late period; in inflammation of the ovary there is partial fluctuation, hardness in several parts, pain and tenderness at the first moments of turgidity, seated in the pelvis or at its circumference."

782. Chronic inflammation of the ovaries is, in almost every case, the sequence of the acute form, and its symptoms are similar but more obscure. In this form of the disease, there will always be more or less enlargement in the iliac region, with a deep-seated and dull pain, tenderness on pressure, and a sensation of weight in the pelvis. These symptoms are occasionally aggravated by exercise in the erect position, and sometimes during the evacuation of the urine and faeces.

783. *Diagnosis.*—If we depended on the symptoms presented by the disease, the diagnosis would be very obscure, as the same symptoms are presented by other diseases of the uterus and its appendages. Thus, in inflammation of the cervix uteri, the pain in the ovarian regions is so constant, as to be almost a pathognomonic symptom. The absence, however, of disease of the cervix uteri, or of any portion of the uterus which may be ascertained by examination, would make it probable that the symptoms were produced by ovarian inflammation. The diagnosis may also be assisted by a rectal examination, the finger introduced into the rectum can feel the enlarged ovary, which is sensitive to pressure.

784. *Treatment.*—The treatment of inflammation of the ovary is similar to that recommended for metritis. In the acute stage of the disease, prescribe the special sedative, Aconite or Veratrum, as indicated by the pulse, associating with it any agents that may be called for. In some cases the tensive, dragging pain, backache, and soreness of muscles, call for Macrotys so distinctly that one can not make a mistake. In others the burning pain in the part, sometimes extending to the vagina, with frontal headache and sharp stroke of the pulse, calls for Rhus. The scanty urine, with tenesmus, and frequently irritation and determination of blood to the brain, calls for Gelsemium. The dull, stupid headache, with inclination to sleep, and especially if associated with "hives," calls for Belladonna. The steady pain extending to the groin is an indication for Bryonia; uterine tenesmus for Viburnum; and dragging in the groins and vulva, Phytolacea.

785. In many cases we will find the patient with a bad breath, and a heavily coated tongue. The remedy is of course not always Sulphite of Soda, but the pallid dirty tongue will tell the story.

If at the menstrual period there is fetor, give Chlorate of Potash. Cathartics should be carefully used—a Seidlitz Powder, “salts and sulphur,” citrate of Magnesia, rather than the harsher vegetable cathartics. Still there are some cases where the old-fashioned compound powder of Jalap, or Podophyllum, will prove of advantage.

786. Fomentations of hops, stramonium, water-pepper, etc., may be employed at first, or what is better, a surface of two or three inches may be painted with Aconite and Veratrum, and then a sponge or flannel wrung out of hot water applied. Chloroform counter-irritation may be used in some cases, but as a rule the ordinary counter-irritant does more harm than good.

787. In the sub-acute or chronic form of the disease, the irritating plaster may be applied over the diseased ovary, and the treatment named for chronic metritis will be applicable here.

788. In regard to its termination in suppuration, Dr. Ashwell says: “If matter does form, we must watch its progress; for it may point either in the iliac fossa itself, or lower in the groin. If the pain be not acute, or the patient too much exhausted, we may permit the abscess to open spontaneously; but if, from feeble powers, or the thickness and induration of the integuments, this should be a prolonged process, then we open it either by the lancet or caustic. The former is the easier; the latter, from its producing adhesions between the ovary and peritoneum, and thus preventing the escape of pus into the peritoneum or cellular tissue of the pelvis, is the safer method. If matter be discovered through the walls of the vagina, an opening may be made either with a small trocar or lancet. Doubtless, in cases so full of interest, every precaution must be observed, both as to the general treatment and the evacuation of the pus. It can scarcely be too strongly urged, that sexual intercourse be avoided for some time, at least till the health is restored, and the local ovarian irritation has subsided. The published cases prove that in some instances, there is a proneness to the repetition of the malady.”

OVARIAN DROPSY.

789. This name has been given to an accumulation of fluid contained in one or more cysts, which have their origin from the

substance of the ovary. Unlike other forms of dropsy, the fluid here is secreted by a new and abnormal formation, and though it is furnished with vessels and capable of rapidly secreting an enormous quantity of fluid, yet this cyst-wall is incapable of reabsorbing the effused fluid. Thus we will see the marked difference between this and other dropsical diseases, if we compare it with ascites, or abdominal dropsy. In this last form of dropsy the fluid is effused from a structure capable of absorption, and though the effused fluid is similar in both diseases, yet in this, if the blood-vessels are emptied by copious diuresis, or by the action of hydragogue cathartics, the fluid effused into the peritoneal sac will be reabsorbed and carried out of the system. In encysted dropsy, however, no matter how copious the discharge of fluid is from the kidneys or bowels, not the least effect is produced on the local dropsy.

790. The pathology of ovarian dropsy has been minutely investigated of late years, by many eminent observers, and though the causes of the morbid cyst-production is still involved in much obscurity, yet we have a very complete history of their anatomical structure and mode of growth.

791. Ovarian cysts are divided into two classes, the simple or unilocular cyst, and the multilocular or proliferous cysts. The first are called simple or *unilocular*, because but one cyst is found growing from the ovary, and which contains the entire fluid, and has no power to reproduce similar cyst-structures. The second variety or *proliferous* cysts are those whose parieties present the very remarkable character of producing other cysts of a similar character with themselves.

792. *Simple Cysts.*—Though I have already stated that the characteristics of the simple cyst was, its separate existence or origin from the ovary, and a want of power to give origin to similar formations, yet many authors make their want of reproductive power the characteristic difference between them and the proliferous cysts, and not their separate existence in connection with the ovary. It must be recollected, then, that the term *unilocular* as used by some authórs, is not applied to the single

cyst, but to any and all cysts which have a separate origin from the ovary.

793. In reference to the simple cysts, Prof. Rokitansky says: "There are either one or several unilocular cysts in the ovary; at times they are even so numerous, that the ovary appears converted into an aggregation of cysts. They are placed near one another, each being formed from the stroma, independently of each other, and they have a rounded form. If they enlarge, they come into mutual contact, their parieties adhere to one another, and they are flattened by reciprocal pressure; the impression may thus arise, that several have, in the manner of the compound cysts, been formed within the parieties of the same matrix. They attain a considerable size, rarely, however, exceeding that of a man's head. In this case the solitary cyst, or one of several cysts, undergoes extreme development, while the remainder continue undeveloped. They generally have delicate sero-fibrous parieties, and may contain a colorless, or pale yellowish or greenish, serous, or a more consistent yellow, brownish, colloid substance, or an opaque, chocolate-colored or inky fluid. In many cases they are undoubtedly formed from Graafian follicles, and it appears that an inflammatory process is particularly liable to give the first impulse to this metamorphosis. They are probably, however, as often new formations from the beginning; and this is the more likely in those cases in which their number exceeds the average number of Graafian follicles."

794. *Multilocular or Proliferous Cysts.*—These cysts, like the former, are supposed to arise from the Graafian follicles, and they may be developed in the first instance as simple cysts, but in time they become proliferous, giving origin to numerous cysts of a similar character. The cysts produced from the parent structure may arise from the internal surface and project inward, attached to the original cyst-wall by a pedicle, or by a broad base; they also vary much in number and in size. In some cases the parent cyst will be found filled with these secondary growths of various sizes, each containing a portion of the enclosed fluid. Again, the secondary cysts may arise from the external surface of the parent cyst, and project outward from it. These proliferous cysts are

capable of much greater development than the simple variety; and to them and the next variety most of the large encysted ovarian dropsies are due.

795. Prof. Rokitansky describes a third form of cyst, which closely resembles and belongs to the proliferous variety; he states that it is of a cancerous nature, and belongs to the areolar variety of carcinoma. "In the shape which we are about to describe, it rarely occurs any where but in the ovary. It is an accumulation of numerous fibrous sacs, which contain various substances, but for the most part a glutinous, viscid matter. They diminish in size from the circumference toward the interior, and especially toward the base of the morbid growth; so that the latter represents a condensed alveolar mass, the alveoli or follicles of which consist of a white, shining, fibrous tissue, and contain a colorless or grayish, yellowish, yellowish-green, or reddish viscid gelatine. We have here an areolar cancer, the peripheral follicles of which are converted into large sacs. This species of dropsy, which, for the sake of distinction from the other varieties, we term alveolar dropsy, is proved to be malignant, not only by its being accompanied by well-marked cachexia, but also by its complication with cancer (especially of the medullary variety) in the same organ, and with other varieties of cancer in other organs, as the peritoneum, stomach, etc."

796. *Structure.*—The cyst-wall is said to consist of three coats—an external peritoneal, a middle fibrous, and an internal fibrous, but smooth, and capable of secreting, though not of absorbing fluid. The thickness of the cyst-wall varies in different cases, and even in different parts of the same cyst; and when there are several cysts, there will often be considerable difference in the thickness of their walls. Sometimes the walls are as thin as brown-paper, and they vary from this to an inch in thickness. The ovarian cyst is sometimes very sparsely supplied with blood-vessels, as is very generally the case with the simple cyst; but at other times they are very numerous and large. Cruveilheir considers them to be principally veins, but Delpech, who has carefully dissected them, considers them to be arteries; he has found them as large as the little finger. The arteries of the cyst arise from

the ovarian arteries, and the veins empty into the ovarian veins; both sets of vessels are found in the middle coat.

797. We have next to consider the structure and character of the pedicle, a point that has been overlooked by most authors on this subject. If we trace an ovarian tumor, whether consisting of one or of many cysts, from the surface inward to its attachment, we find that it gradually grows less in size, the walls being nearer in apposition, until within a short distance of the ovary they become consolidated, forming a solid stalk of fibrous tissue of variable thickness. Within this pedicle are the blood-vessels which pass to and from the cyst. The length of the pedicle varies in different cases; sometimes it is as much as two or three inches in length, and flexible; at others, it is very short, not more than half an inch in length. The pedicle likewise varies in thickness according to the thickness of the cyst-walls, and from other circumstances; sometimes it is not thicker than the little finger, at others one or two inches in thickness. In the majority of cases the attachment of the pedicle is directly to the ovary, this organ being but slightly changed in structure; in other cases, however, the ovary may be very much changed in structure, or it may have entirely disappeared, or its remains may form a sort of knot on one of the parieties of the cyst. In either case, however, the point of its attachment will be the same, as its vessels are derived from the ovarian vessels, and these retain it in its position.

798. If inflammation should have occurred, either in the cyst itself or in the adjoining structures, from its presence, adhesions may form between it and any of the adjoining viscera. Thus, it has been found attached to the fallopian tubes, to the uterus, to the intestines, to the liver, the abdominal walls, both anterior and posterior, and in fact to any part of the abdomen or its contents with which it may be in relation. The character of these adhesions are various; sometimes they are but slight, readily broken down, and of a very low degree of organization, at other times they are dense and firm, their tissue being plentifully supplied with vessels. In some cases reported, the vessels in the adhesions were so large as to give rise to dangerous hemorrhage when divided.

799. *Contents.*—As I have already stated, the contents of the cysts varies much in character; in addition to the fluid contents already mentioned, there have been found hair, bony matters, remains of placenta, fleshy substance, coagulated blood, pus, etc. The examination of the cyst contents with the microscope, is said to form a very certain means of diagnosis; but, as it would rarely prove available to the general practitioner, I have omitted its description.

800. *Symptoms.*—In the commencement of the disease, the symptoms are very obscure; the patient may feel a dull, heavy pain or sensation of soreness in the ovarian region, with a sense of weight in the pelvis, and this may cause her to notice a slight enlargement in the iliac region. It often happens that the menses are suppressed; but sometimes this is not the case. Sometimes the symptoms very much resemble pregnancy, so much so, indeed, that the patient may suppose herself pregnant; in addition to the suppression of the menses, there may be morning-sickness, painful and enlarged breasts, sometimes, as it is said, secreting milk, etc.

801. So long as the ovarian enlargement does not exceed in size the space within the pelvis, it remains partially concealed by the pelvic walls, and it may either remain free and movable in the pelvis, or form attachment to the pelvic contents. As the cyst or cysts enlarge, they arise into the abdominal cavity, and as they change their position, the uterus is drawn upward by means of the ovarian ligament, and the vagina is elongated. As the enlargement continues, the dropsical ovary occupies more and more of the abdominal cavity, the intestines are pushed into the inguinal regions, and the stomach, liver, and spleen, together with the diaphragm, are forced upward into the thorax. The symptoms at this time are very graphically described by Dr. Burns. "In the course of the disease, the patient may have attacks of pain in the belly, with fever, indicating inflammation of part of the tumor, which may terminate in suppuration, and produce hectic fever; or the attack may be more acute, causing vomiting, tenderness of the belly, and high fever, proving fatal in a short time; or there may be severe pain, lasting for a shorter period, with or without temporary exhaustion, and these paroxysms may be frequently

repeated; but, in many cases, these acute symptoms are absent, and little distress is felt until the tumor acquires a size so great as to obstruct respiration, and cause a painful sense of distention. By this time, the constitution becomes broken, and dropsical effusions are produced. Then the abdominal coverings are sometimes so tender, that they can not bear pressure; and the emaciated patient, worn out with restless nights, feverishness, want of appetite, pain, and dyspnoea, expires."

802. Several cases of ovarian disease are reported in which the cyst was ruptured or gave way, and the contents were discharged into the peritoneal cavity, into the large intestines, the bladder, or the vagina, through the fallopian tube, or externally through the abdominal wall. The cause of this rupture has most generally been inflammation terminating in suppuration, though, in some cases, it was accidental. Some of these cases permanently recovered after the discharge of the fluid, while in others it produced a fatal result. The discharge of the fluid into the peritoneum has been of the most frequent occurrence, and in many of these cases the consequent peritonitis was slight, the fluid was discharged, and, in some cases, the cyst obliterated.

803. *Diagnosis.*—We have to distinguish ovarian dropsy from pregnancy, ascites or abdominal dropsy, tumors of the uterus, distended bladder, pelvic abscess, retention of the menstrual fluid from imperforate hymen, and hydrometra.

804. *Pregnancy* may be and has been mistaken for ovarian dropsy, and it is not surprising that this should happen, when we recollect that the earlier symptoms of ovarian dropsy simulate in a great degree those of pregnancy. It may, however, be easily distinguished by a careful manual examination, by ballottement, and by the foetal movements; the evidence will be positive if it has existed beyond the usual period of gestation.

805. Ascites has been frequently mistaken for ovarian dropsy, or ovarian dropsy for ascites. It may be distinguished from ascites by the defined form of the enlargement, by the previous history, that the tumor first appeared in one side, and by its permanent inclination to that side, by its being unaltered in the recumbent position, and by the obscure fluctuation. Percussion

here is of great value to assist the diagnosis. In ovarian dropsy there will be a want of resonance over the tumor, in whatever position the patient is placed, while in ascites the dullness will be in the lowest part in all positions, while there will be a tympanitic sound in the highest level. In ascites, likewise, the fluctuation will be diffused, if a hand be applied to the abdomen at one side, and percussed at the other, the diffused character of the fluctuation will be evident. On the contrary manipulation discovers a circumscribed tumor in ovarian dropsy, in which only the fluctuation can be observed.

806. From *tumor of the uterus*, by the absence of elasticity and fluctuation, and by a careful examination of the uterus in the manner heretofore pointed out.

807. It is said that a *distended bladder* has been mistaken for ovarian dropsy, but this could never happen if the previous symptoms of urinary disease were taken into consideration, and the catheter used.

808. From *pelvic abscess* it may readily be distinguished by the previous symptoms, and the present condition of the patient's health. Ovarian dropsy never producing the constitutional disturbance, fever, hot skin, loss of appetite, rigors, and throbbing pain in the part, that characterizes the other disease.

809. From *retention of the menses*, by the result of a vaginal examination, which will determine the cause of the enlargement.

810. From *hydrometra*, by the fact that in this disease the enlargement is in the median line, and by its being confined to the uterus, which may be determined by moving the uterus with a finger introduced into the vagina, and by the hypogastric touch.

811. The next important point, after ascertaining that the disease is ovarian dropsy, is to ascertain the presence or absence of adhesions, more especially if an operation is to be performed.

On this point I will quote from Dr. Brown, he says:—"Having discovered ovarian dropsy, the question of treatment will be further elucidated by ascertaining, if possible, whether the tumor grows free from a single pedicle, or is attached by adhesions to the peritoneum or to neighboring viscera. To determine this, the patient should lie in the horizontal position, with the thighs flexed,

so as to relax the abdominal wall. The endeavor to move the cyst from side to side is first to be made; and, if this can be easily done, it proves the absence of adhesions; next, the hand being placed firmly on the relaxed parieties, if these are readily moved over the walls of the cyst, there are no adhesions, at least on the upper and lateral surfaces. Lastly, a third argument against the presence of adhesions is deducible when the abdominal parieties, which are thin in this disease, can be grasped and puckered up, and so moved over the cyst; and when they can be gathered up readily without raising the cyst. If these three indications are met with, we may determine there are no adhesions.

812. "Another plan, for which I am indebted to my colleague, Dr. Sibson, is based on the extent to which the contents of the abdomen are forced downward during a deep inspiration, by the descent of the diaphragm. If there be no adhesions in front, the upper boundary of the ovarian tumor descends to the extent of an inch during a deep inspiration; the space previously occupied by the tumor being now taken up by the intestines; consequently, if percussion be made over the upper part of the tumor, during ordinary respiration, a dull sound is elicited; but when the patient takes a deep inspiration, an intestinal resonance is there perceptible."

813. *Treatment.*—It is a well proven fact that no remedies that can be administered internally will have the least effect in decreasing the size of the tumor, nor in preventing its further growth. Our only object then, so far as medicine is concerned, is to keep up or restore the general health of the patient, and keep the secretions and excretions in a normal condition.

814. The measures employed for the cure of the disease when this is attempted, and it always should be, are entirely local or surgical. Of these we will consider separately—1. Compression and palpation; 2. Tapping simply; 3. Tapping with compression; 4. Tapping with injection of iodine into the sac; 5. Artificial oviduct, either external, per vaginam, or per rectum; 6. Excision of a portion of the cyst; 7. Extirpation.

815. *Compression and Palpation.*—This method has been tried, and, it is reported, with success. Dr. Hamilton states that after

sixteen years' trial, he has succeeded in a number of cases in curing or retarding the disease, by compression of the abdomen, percussion, the use of the warm bath, and a protracted course of the muriate of lime, together with the ordinary means for promoting the general health. This mode of treatment should be adopted in the early stages of the disease, and even if it should only retard the progress of the disease, something will have been gained. The compression of the tumor should be steady and continued, yet not so severe as to produce any inconvenience to the patient. Palpation is generally used with it; it consists in striking over the tumor gently for fifteen or twenty minutes two or three times a day. The main difficulty in applying compression is, the difficulty of retaining a bandage in its position, especially if the abdomen is enlarged. A very good contrivance for this purpose will, I think, be found in Dr. Simpson's plaster belt. "This consists of a belt of lamb's skin or chamois leather, eight or ten inches deep, and shaped and sewed so to carefully fit the loins and lower part of the abdomen of the patient, like a common abdominal bandage, and embossed in front so as to contain and include, as in a bowl or cup, the protuberant portion of the tumor. To fix this belt, its interior is spread with a plaster composed of one part of adhesive to two parts of soap plaster; they require to be removed and renewed every four or six weeks." This plaster belt will not only furnish the requisite degree of compression, but it will support the tumor and abdomen, and thus relieve the disagreeable sensations attendant on the weight of the tumor.

816. *Tapping*.—Tapping is hardly, if ever resorted to as a means of cure, but as a palliative measure giving temporary relief from the distension. Though tapping is not expected to produce a cure, yet many cases are on record where it was followed by permanent relief, no reaccumulation taking place. Mr. Brown, however, thinks that these were cases of cystic disease of the broad ligament, or fallopian sacs, and not ovarian cysts. By the most of authors it is advised to defer tapping as long as possible, from the fact that the fluid reaccumulates faster than it did before, and that it is always altered in character for the worse, and that the operation itself is not unattended with danger.

817. Two methods of performing paracentesis are recommended, either of which may be adopted. In the first, and that most commonly adopted, the patient is placed in a sitting posture on a chair or on the edge of the bed, and a broad bandage placed around the abdomen and crossed behind the back, each end being held and tightened by an assistant, as the fluid is evacuated. The operation is usually performed in the linea alba, about half way between the umbilicus and pubes, at this point a hole is cut through the bandage through which to make the incision. The surgeon then makes an incision, about three-fourths of an inch long, through the integuments, and then passes through this opening a large sized diamond-pointed trocar and cannula into the cavity of the cyst. Instead of making a first incision with the lancet, some surgeons use nothing but the trocar. The trocar being withdrawn, the fluid passes through the cannula and is received in a proper vessel. Until the cyst is emptied, steady compression should be kept up by the assistants, and, if possible, the entire fluid contained in the cyst should be evacuated. As soon as the fluid is drawn off, the wound should be closed with adhesive plaster, the bandage around the abdomen fastened, and the patient placed in bed.

818. The other method recommended is to have the patient placed in the horizontal position, lying near the edge of the bed, on the side that is affected, and with the tumor projecting over the edge of the bed. The trocar is then introduced as already described, either in the course of the linea alba, or linea semi-lunaris; if the cyst is punctured in the semi-lunar line, care will have to be taken to avoid the epigastric artery and any enlarged veins which may be present. Toward the termination of the operation the most complete evacuation of the fluid may be secured, by turning the patient upon her breast, so as to make the puncture the most dependent part of the cyst. The advantages to be derived from this position are, that the abdominal bandage can be dispensed with, to the great relief of the patient, to the assistants, and to the operator: that the contents of the dropsical cyst or cysts can be more easily and completely evacuated; that there is not near so much liability of air enter-

ing the cavity ; and that this position prevents faintness, which so often occurs when the patient is in the erect posture.

819. *Tapping with Pressure.*—After tapping, the abdomen should be compressed, as affording an additional probability of cure, as well as a matter of precaution when the origin of the cyst is obscure. Compression, however, to be beneficial, should be steady and continued, though not so severe as to give the patient any pain or uneasiness. The directions given for pressure heretofore, will apply to compression after tapping. The benefits to be derived from pressure after tapping, are: to prevent the re-filling of the cyst, partly by keeping its walls in contact, and partly by compressing the vessels supplying it; it is also supposed to act as a curative measure, by causing absorption of the cyst structure, in the same manner that other tumors are dispersed by pressure. Some cases are reported, in which these measures have been followed by a permanent cure; these cases, however, are supposed to have been unilocular cysts; in other cases, it has retarded the progress of the disease, and in others, no beneficial effect was perceived.

820. *Tapping, and Injection of Iodine.*—Of late years, it has been attempted to produce adhesion of the cyst-walls after evacuating the fluid, by means of irritating substances thrown into its cavity, in the same manner that adhesions are produced between the walls of the tunica vaginalis in hydrocele. For this purpose, a solution of the Sulphate of Zinc, Iodide of Potassium, Tincture of Iodine, etc., have been used, but none but the last mentioned agent are now used. The benefit to be derived from this practice may be seen in the following conclusions arrived at by Dr. Simpson, from his own experience in its use, and from the reports of others.

821. 1. “In none of the cases of ovarian dropsy treated with iodine injections after tapping, has he yet seen any considerable amount of local pain follow the injection, with but one exception; in most instances, no pain at all is felt; and in none has constitutional irritation or fever ensued. In the one exceptional case, considerable local irritation followed; and the pulse rose to 110; but the same phenomena occurred in the same patient after previous tappings, without iodine being used.

822. 2. "While the practice seems thus so far safe in itself, it has by no means proved as successful as in hydrocele, in preventing a reaccumulation of the dropsical fluid: for, in several instances, the effusion into the sac seems to have gone on as rapidly as after a simple tapping, without iodine injection.

823. 3. "But, in two or three of the cases, the iodine injection appears to have quite arrested, for the time being, the progress of the disease, and to have produced obliteration of the tapped cyst, as there is no sign of any reaccumulation, though several months have now elapsed since the date of the operation.

824. Lastly. "Accumulated experience will be required to point out more precisely the special varieties of ovarian dropsy most likely to benefit from iodine injections, the proper times of operating, the quantities to be injected, and other co-relative points. Perhaps the want of success in some cases, has arisen from an insufficient quantity of iodine being used, and from the whole interior of the cyst not being touched by it. The greatest advantage would, of course, be expected from it in the rare form of unilocular ovarian cyst. In the common compound cyst, the largest and most preponderating cyst is usually alone opened in paracentesis; and though it were obliterated, it would not necessarily prevent some of the other smaller cysts from afterward enlarging and developing into the usual aggravated form of the disease."

825. Dr. Simpson recommends the undiluted Tincture of Iodine for the injection, of which from two to three ounces are used for an injection; in some cases, he allows a portion of the fluid to escape, while in others, the whole is retained. Iodine injected into an ovarian cyst, has never been detected in the urine, thus showing that the cyst-wall has no absorbing power; while, if the tincture of iodine is placed in contact with the normal tissues, as in injecting the sac of a hydrocele, it is absorbed, and may be detected in the urine.

826. *Artificial Oviduct.*—It has been proposed to effect a cure of ovarian dropsy, by forming a fistulous opening, through which the fluid of the cyst may be discharged, and from the degree of irritation produced by the constant discharge and altered character of the secretion, an eventual adhesion of the walls of the cyst

would take place. The operation has been frequently performed in Paris and in England, as it is reported, with a considerable degree of success. This method of treatment was proposed by the French surgeon, Le Dran, but the best description of it is by Mr. Baker Brown, case 49. "Having administered chloroform, I placed the patient in the horizontal posture, near the edge of the bed, and made an incision two inches in length, about half way between the umbilicus and the anterior and superior spine of the ilium, dissecting carefully down to the peritoneum. I next made a second (shorter) incision at right angles with the first, extending from its lower termination inward to the median line. The flap thus formed was dissected back, exposing the peritoneum with the subjacent whitish cyst appearing through it. Introducing a large-sized trocar at the angle at which the two incisions met, I withdrew nine pints of fluid, containing pus and flocculent matter; and before removing the cannula, divided the peritoneum in the line of the longer incision; and having reflected it on each side, stitched the cyst to the tendon of the external oblique muscle, taking care not to include any portions of muscle, or of peritoneum. The next step was to remove the cannula, and with a pair of scissors to divide the cyst midway between the sutures; a piece of lint dipped in oil was then inserted, and secured by strapping; lastly, the external wound was partially closed at its extremities by sutures." After the artificial opening is formed in the manner described, it is kept from closing up, either by the daily introduction of tents, or as Le Dran first proposed, by the insertion of a very large but short cannula.

827. The character of the discharge will be very much changed by the contact of air with the cyst-wall, and, when the operation succeeds, it will gradually decrease in quantity until the cyst is occluded, when the artificial opening may be allowed to close. If the discharge from the cyst becomes very offensive, an injection of dilute Liquor Soda Chlorinata has been used with advantage.

828. In the cases reported, where this operation was performed, some were entirely successful, in others it was but palliative, a fistula being left, the ovarian sac not having closed, and in others it terminated fatally. I have no means of knowing

definitely the percentage of cures resulting from it, as it has not been as extensively performed as other operations for the same disease, still from the cases reported I think it worthy of a trial.

829. The artificial opening has likewise been made from the cyst through the vagina, and also through the rectum, and, when the cyst is low down in the recto-vaginal space, the vaginal opening would probably be preferable.

830. *Excision of a portion of the cyst.*—This operation consists in making a small incision through the abdominal wall, evacuating the contents of the cyst, and then drawing it out through the opening, excising a larger or smaller portion of it, returning it to the abdomen and closing the external wound. The object to be attained by the operation is, first, the evacuation of the fluid, and, second, an artificial communication between the cyst and the peritoneal cavity, the fluid that is effused by the cyst being reabsorbed by the peritoneum. The operation is predicated upon the fact that in cases where cysts were accidentally ruptured, their contents being discharged into the peritoneal cavity, the fluid was absorbed by the peritoneum, and the patient thus cured. It has been recommended by some authors to make an incision not more than an inch in length, either in the linea alba, or linea semilunaris, through which the cyst may be drawn out and excised. Others, however, among whom is Mr. Baker Brown, consider that the patient runs no more risk from an incision two or three inches in length, than from one an inch, and that this large incision enables the surgeon to determine the vascularity of the cyst, and the character of its adhesions, to avoid severing any blood-vessels in the excision, or to tie any that might be divided by the knife.

831. In regard to the success of this operation Mr. Baker Brown says:—"The excision of a portion of the cyst is an operation more free from danger than complete extirpation, and less tedious in its results than the formation of an artificial oviduct. But it has a limited application. The conditions likely to favor its success are: The cyst unilocular, its walls thin, and possessed of little vascularity, very few or no adhesions, the fluid only slightly albuminous, and of a light specific gravity. When these favorable circumstances coexist with unimpaired general health,

or very little ailment, then only should this operation be performed. If pressure had been tried without success, or was interdicted by the existence of prolapsus uteri, or by any other objection, an additional reason to try this operation would exist. Now, by preferring the longer incision, and, being prepared to extirpate the whole cyst if necessary, the surgeon will be able to explore the parts to ascertain what operation is most eligible. For instance, if the walls of the cyst are found thicker and more vascular than was expected, it will be safer to proceed to extirpate the entire cyst, after tying its pedicle, than to run the risk of profuse hemorrhage by cutting out a portion. Or, if the cyst is found to be thin, unilocular, unattached, and unvascular, and the fluid thin, then the plan of excising a portion may be adopted with reasonable prospect of success."

832. *Extirpation*.—Extirpation, or the entire removal of the diseased mass, is the last resort of the surgeon when other measures fail, or in cases in which they are not applicable. There is no need of disguising the fact, that it is a most serious and dangerous operation, and that it has often been the means of shortening the lives of patients, who might otherwise have lived for months, and perhaps years. Yet in other cases it has been the means of restoring numbers to health, who otherwise would have shortly succumbed to the disease. The question here arises, is ovariotomy justifiable? This question can be best answered by each practitioner after examining the evidence on both sides. This evidence I propose briefly to give.

883. *First*.—Ovarian dropsy in many cases is essentially a chronic disease; many women living for years who are subjects of the disease, and even enjoy a comparative degree of health. Thus, "Sabatier examined the bodies of several women who had carried these encysted tumors during half a century, without alarming derangement of health. Dr. Ashwell states that cases have fallen under his observation, in which women have become pregnant, and have been many times safely delivered, notwithstanding a dropsy of the ovary; and others, when the tumor, although of considerable size, had existed for many years without tapping, or any other than mere palliative treatment. Again, we

have numerous cases reported where the patients were frequently tapped, and yet lived for many years.

834. Notwithstanding that some women have lived for many years with ovarian dropsy, in a very large majority of cases the disease has ultimately proved fatal; and in at least a majority of cases, the disease has proved fatal in from one to five years. Again, in those cases in which ovariotomy has been proposed as a remedy, it is almost certain not only that the disease will prove fatal, but that in a comparatively short time.

835. In regard to the success of the operation, it is as great as in other operations which are sanctioned by the entire profession. Thus, in 68 cases, collected and tabulated by Dr. Churchill, 41 recovered and 25 died, or one in about two and a-half; these cases embraced those of every variety, with and without adhesions, in which the operation could not be completed, and 8 cases in which there was an error in the diagnosis; the table must, therefore, at least, be considered as a fair statement of the success attending the operation. Dr. Atlee, of Philadelphia, has tabulated 172 legitimate cases of ovariotomy; of these 123 recovered, and 49 died, or one in 3 25-49, or 28 21-43 deaths in 100 cases. Mr. S. Lee has collected 114 cases of ovariotomy, of which 74 cases recovered, and 40 died, or nearly one in three. Now, according to Dr. Simpson, the results of amputations in the Paris hospitals from 1836 to 1841, were—

Out of 201 amputations of the thigh, 126 died, or 6 in every 10
" 192 " " leg, 106 died, or 5½ " 10
" 91 " " arm 41 died, or 4½ " 10

Thus, it will be seen that ovariotomy has been as successful as operations that are considered fully justifiable, and that are performed every day.

836. Does ovariotomy, however, effect a perfect cure of the disease, so as to secure the patient against its return? This question may be answered in the affirmative. Dr. Simpson considers that the pathological nature of multilocular disease of the ovary is such that it has no tendency to recur after its complete removal. From the character of its morbid structure, and its

clinical history, it is certain that it presents no liability to spring up again, like malignant or tubercular disease in the same locality, or in distant and in different organs of the body. The other ovary might be partially affected, and if so, might require removal along with the first, a step which, at the time, would probably not add much to the absolute danger of the operation, seeing the abdomen was once opened." Contrast this with other operations. "The surgeon amputates a limb, or excises a tumor for some form of carcinomatous disease, hazarding more or less the life of his patient, for the temporary removal of a diseased action which is almost perfectly certain to recur. He ties the subclavian for aneurism; but is it not a disease which is very liable to coexist in different vessels at the same time, or to form consecutively in different parts; and if the patient escapes the great and imminent dangers of the operation, has he any surety against its re-appearance elsewhere? You amputate the thigh to get rid of a scrofulous or tubercular knee-joint. But in how many cases is local tubercular disease the mere result of a general diathesis, that ere long will betray itself in some other part or organ."

837. From the dangerous character of the operation, and the importance of having direct and explicit rules to guide the surgeon, it would be supposed that we would have many minute descriptions of it in the various treatises on the subject. Yet so far as my reading has extended, and it has been tolerably extensive, I have seen but one description that I would be willing to put into the hands of the student or practitioner as a guide. It is a well-known fact, that in such operations as this, success does not depend upon the skill with which the operator uses the knife, but upon his attention to the small matters preparatory for the operation, during it, and in the after treatment. The only author that gives this necessary description is Mr. Baker Brown, and I can not do better for my readers than to give his description.

838. *Conditions rendering the operation of ovariotomy justifiable.*—1. "The surgeon should be satisfied, by most careful and repeated examination, that the tumor is ovarian; and those with whom he may consult should take equal pains to form an unbiased opinion.

2. "That the tumor is increasing, and that the disease will be most likely to progress to a fatal issue if allowed to take its course.

3. "That such of the different modes of treatment already described as appear to be suitable to the case, excepting the excision of a portion of the cyst, have been fairly tried without lasting benefit.

4. "That the tumor is not cancerous.

5. "That the patient is not so reduced, in her general health and vigor, as to render her an unfit subject for a formidable operation.

6. "That there is no evidence of the existence of adhesions.

7. "That the fluid is not highly albuminous.

839. *Preparations for the operation.*—"As all important operations are liable to fail from the neglect of little things, both in preparatory proceedings and in the operation itself, the following suggestions, all of which are really of moment, may be useful to those who are about to operate for the first time.

1. "If the weather be cold, the patient should have, ready to wear, a flannel waistcoat, and a pair of flannel drawers; the waistcoat should be put on before the operation.

2. "She should have a warm bath the night before the operation, to cleanse the skin, and thereby insure free perspiration after the operation.

3. "The bowels should be opened by a dose of ox-gall or castor oil and an enema, on the morning of the operation day.

4. "A hot-water bottle should be prepared for her feet.

5. "There should be a thermometer in the room, and the temperature should be kept systematically at not lower than 66 degrees, nor higher than 70 degrees. A kettle should also be boiling on the fire, so as to make it possible to insure a degree of moisture in the air by the steam. This is especially requisite when the wind is in the east, or the weather hot and dry.

6. "If the operation take place on the bed which the patient is afterward to occupy, the lower part of it should be prepared and guarded by a mackintosh-sheet and an old blanket, which can be afterward removed. There should be a hassock or stool for the feet to rest upon; the feet and legs should be clothed in warm

stockings, and the hands and arms enveloped in a warm flannel gown.

7. "As the patient will have chloroform administered, she should not take any food for some hours previous to the operation, and, to avoid sickness afterward, a supply of ice should be prepared for her to suck for two or three hours *before the operation; this is of much consequence.*

8. "There should be plenty of hot water in the room, in which, in cold weather, both the operator and his assistants should immerse their hands before touching the patient; and there should be from three to six basins of warm water ready for immersing sponges, or warming flannels, etc.

9. "The duties of each assistant should be clearly assigned and understood before entering the room, so as to avoid confusion, and also to *save time*, an important point when the peritoneum is exposed.

10. "Four or six large needles should be got ready, armed with the best twine, well-waxed, for the interrupted suture, and one large needle to carry the double ligature (also of twine, not of silk) for the pedicle. Several smaller ligatures, for blood-vessels, should also be ready, and a flannel bandage to go round the abdomen after the operation is completed; also a supply of lint and a few adhesive straps.

11. *Instruments.*—"One or two scalpels, a pair of scissors, a pair of vulsellum-forceps, a pair of good common forceps, tenaculum, trocar, and cannula of large size, together with the needles and ligatures, should be ready on a tray.

Lastly—"As much will depend upon the after-treatment, it will be well to arrange beforehand that the operator, or some other competent surgeon, should remain with the patient all night; indeed, she should not be left for more than two hours at a time, for the first three or four days.

840. *Mode of operating.*—"The patient being placed conveniently on her back, and brought under the influence of chloroform, an exploratory incision, from two to three inches in length, should first be made in the linea alba. Having divided the peritoneum, and reached the cyst, two or more fingers should be

passed over its surface to ascertain if adhesions exist; if these are slight and recent, they should, if possible, be broken down by the fingers, or, if they are few and small in diameter, so as to bear division, they may first be tied, to guard against hemorrhage, and afterward divided, but if they are spread out to a considerable breadth, it is better to desist from any further procedure with a view to extirpation. If, on the contrary, there are no adhesions, or only such as can be easily broken, the incision should be enlarged to four inches, or more if necessary. The next step is to tap the cyst or cysts with a proper trocar and cannula, and in the evacuation of the fluid to take care that none of it escapes into the cavity of the abdomen; then, if there be only one cyst, and that not thick nor vascular, a portion of it only may be excised in the manner heretofore described. If the cyst, however, should be found to be thick, or vascular, or multilocular, it will be the safest procedure to have recourse immediately to complete extirpation in the following manner: The pedicle of the tumor is to be taken in the left hand, and gently drawn outward from the pelvic cavity, an assistant carefully keeping back, by warm flannels, the bowels and omentum. The course of the blood-vessels in the pedicle should now be carefully observed, so that the latter can be safely punctured by a scalpel or bistoury, and through the opening thus made an aneurismal-needle, carrying a double ligature of the strongest twine, be passed and firmly tied on each side of the pedicle. Mr. Wilson advises that, instead of passing a ligature round the pedicle, each vessel should be tied separately; this some regard as an important improvement. This ligature should be passed as near to the tumor as possible, so that, by the entire length of the pedicle being preserved, the ligatured end may be kept external to the abdominal cavity, together with the ligature, as recommended by Messrs. Duffin and Erichsen; this done, the tumor should be removed by dividing the pedicle half an inch from the ligature, which should be given to an assistant, and held at the inferior end of the opening. The operator then closes the wound—and this, I need hardly say, should be done, as in all operations exposing the peritoneum, as soon as possible—by introducing deep sutures, about an inch from the incised edges,

through the parieties of the abdomen, taking care to avoid the peritoneum; these sutures should be about half an inch apart. The edges of the wound should then be more carefully brought together by superficial interrupted sutures occupying the intermediate space between the deep ones. It now only remains to prevent the end of the pedicle and the ligatures from returning into the abdomen; for this purpose, a common director, with its convex surface turned toward the abdomen, should be passed through the ligatures, so as to be firmly held by them at right angles to the wound. The ends of the ligatures should now be secured to the abdomen by adhesive plaster, and the wound dressed with common water-dressing; this done, the abdomen must be supported by a many-tailed flannel bandage, comfortably tight, the patient be placed in bed, and warmth applied to the extremities. Two grains of opium are to be at once given, and one grain repeated every three or four hours until pain is allayed. Ice, milk, barley-water, or weak broths should constitute the diet for the first twenty-four hours; afterwards, stronger animal broth may be allowed, and wine, if the condition of the patient admit of it. It is better, if possible, that the bowels should be confined for four or five days after the operation; the bladder should also be emptied every six hours by the catheter. The temperature of the room should be carefully maintained for the first week after the operation.

841. "I have not enjoined the use of any particular length of incision; for this matter must, I am of opinion, be regulated by the special circumstances of each case, the rule on the surgeon's part being to extract the cyst with the least danger to the patient, and through the smallest practicable incision, without incurring the risk of a failure in the operation. A small incision of an exploratory nature should be the first; if the operation be proceeded with, it must be enlarged sufficiently to admit the extraction of the apparent cyst, and further increase will be very easy, if, by its peculiarly compound nature, its position or relations, or other circumstances, demand it.

842. "It is desirable, when the diseased ovarian mass of one side is removed, and before the abdominal incision is closed, to

look at the condition of the other ovary, which not uncommonly is also diseased, and, when such is the case, it may be at once removed.

843. "The dangers to be apprehended after ovariotomy are : 1. The shock of the operation ; 2. Hemorrhage ; 3. Acute inflammation—peritonitis ; 4. Inflammation of a low or typhoid character.

1. "Now that we have the benefit of chloroform, the dangers from the shock of the operation are greatly lessened ; but in some of high nervous susceptibility and debilitated frame the shock may be fatal or severely felt, even though chloroform has been employed during the surgical proceedings, and the patient has not regained consciousness until they are over, and the wound dressed. Like similar cases from other operations these demand the use of stimulants and other means of support.

2. "Hemorrhage is unfortunately not so uncommon, the source of it being mostly from the cut pedicle or supporting base of the tumor. It will be seen, however, that in one of my cases the fatal bleeding had its source in the divided vessels of an adhesion ; and it is this event which has induced me to recommend the tying of any divided bands of adhesion where they have any thickness, and do not readily break down before the finger. The tying of the stalk as I advise, will, I think, generally provide against hemorrhage from it, care being taken to leave the pedicle out of the wound. Hemorrhage may kill either by the exhaustion immediately induced, or by the peritonitis it kindles.

3. "Acute peritonitis, in a more or less severe form, is a most frequent occurrence after extirpation ; its origin we may trace to the natural effort of the system to close the wounds made in the tissues in the operation by effusion of plastic lymph. Every precaution is to be taken against the advance of this inflammation, and its treatment must be based on the ordinary principles.

4. "Peritonitis of a low or typhoid type appears later than the preceding conditions, and is seen when any of the cut tissues put on an unhealthy appearance, and when probably some morbid excretions get into the blood. Here, again, no special directions

are necessary, since the ordinary principles of treatment are those to be pursued.

844. "It will sometimes happen that unlooked-for conditions present themselves after the abdomen is laid open, and complicate or even render impossible the operation; among such is an unusual vascularity of the cyst, and consequent danger of fatal hemorrhage. Examples of this condition have occurred sufficiently aggravated to deter from completing the operation; in such cases the surgeon must rely on his own judgment. No precise rules can be laid down, but I imagine the vascularity of the sac need rarely arrest the operation. Unexpected attachments of the cyst posteriorly to the intestines, or to other viscera, of such a nature that it would be dangerous to destroy them, will operate more frequently in discountenancing extirpation. Cancer, indeed, may not be discovered until after the operation is commenced, and be so situated as at once to stop it.

845. "Now, in all these cases, excepting cancer, where the steps previous to the drawing forth of the cyst have been proceeded with, and we are compelled to cease from attempt at extirpation, the excision of a portion of the cyst is a mode of treatment still available."

846. I have thus endeavored to present to my readers a brief, yet complete history of ovarian dropsy, and the various means which have been employed for its relief, and in all that has been stated on the subject, I have been careful to embody nothing but what has been fully proven by careful observation. Especial care has been taken in the description of the treatment so far as space would permit, and as I hope, so minutely, that the reader will have no difficulty in applying the different measures recommended in practice: and I might conclude this chapter in the words of Dr. Blundell: "In the present ill success of our practice, all these operations are well worth your consideration; and if you can bring one of them to such perfection as to cure some of the unhappy individuals who now fall victims to the disease, you will, indeed, be conferring an invaluable good on the fairest and least offending part of our species."

TUMORS OF THE OVARY.

847. Of those morbid growths which have their origin from the ovary, we have two varieties, the non-malignant or fibrous, and the malignant or cancerous. The consideration of neither of these varieties is of practical importance, as the treatment of them is merely palliative, and conducted on general principles, the only point of interest being their diagnosis from other diseases.

848. *Fibroid tumors of the ovary.*—Fibroid tumors of the ovary are very similar to the same growths in the uterus; in fact, in many cases it is very hard to determine whether the growth had its origin from the uterus beneath the peritoneum and had become detached, or whether it had its origin from the ovary. They may have their origin within the substance of the ovary, distending that organ nearly equally in every direction, or they may be situated immediately beneath the peritoneal covering, and project from one side of it. These tumors are generally very small, not larger than a pea or partridge's egg. Cruvelheir says, however, that they vary from a few drachms to thirty or forty pounds; these large tumors are thought by most authors to be always malignant. The growth of fibroid tumors of the ovary is always very slow, and they rarely give rise to symptoms of much importance.

849. *Cancer of the ovary.*—This disease is of much more frequent occurrence than the growths last described, indeed, the ovary stands second in the list of organs attacked by cancer. It is more frequent than cancer of the breast, and nearly as frequent as the same disease of the uterus. Cancer of the ovary is the most formidable affection to which the ovary is liable, as it proves certainly fatal, and is not amenable to the treatment adopted for cancer in other parts of the body.

850. Three varieties of ovarian cancer may be distinguished, the areolar, scirrhous, and encephaloid cancer. The first of these has already been described under the head of ovarian dropsy; it consists of numerous fibrous sacs, generally containing a glutinous viscid matter. The second variety or scirrhus, presents the same characteristics that it does in other organs; it is of variable size, uneven and tuberose, and when cut into it creaks under the

scalpel, and shows a whitish firm structure, intersected by strong membranous divisions. The third variety or encephaloid cancer, is rarely met with; it varies considerably in structure; generally it consists of a fibrous sheath, intersected with fibrous septa, within this fibrous structure we find effused the cerebriform matter. The density of the growth varies much, sometimes it is almost as compact as scirrhus, while at others it gives a distinct fluctuation.

851. *Symptoms.*—In the early stages of the disease, the symptoms are very obscure, and it is generally only when it has so increased in size as to produce mechanical inconvenience, that complaint is made; and at this time it is very difficult, if not impossible, to distinguish it from other lesions of these organs.

852. Scirrhoue cancer is very slow in its growth as a general rule, and it may exist for years without producing any dangerous symptoms. Encephaloid, on the other hand, has generally a rapid growth, and it may become of enormous size in a few months; the symptoms presented by this variety are always much better marked. According to M. Colombat: "When the disease approaches a fatal termination, the tumor, which becomes irregular, and more and more enlarged, softens in certain points; the shooting pain, which has been compared to the pricking of needles, becomes more and more severe, and extends to the neighboring parts, to the uterus, vulva, loins, and thigh corresponding to the diseased side; hemorrhages and discharges of an ichorous character and a disgusting odor, escapes from the vagina, which, by extension of the degeneration, often exhibits fungous vegetations, of a granulated and livid reddish appearance. The pains extend by sympathy to the knees, legs, breast and shoulders; the stomach, particularly, is affected, so that digestion is imperfectly performed, and the patient, who acquires an extreme disgust for food, is also troubled with nausea and vomiting, together with obstinate constipation of the bowels; lastly, a state of insomnia, amounting to almost sleeplessness, a permanent condition of hysterism, rapid emaciation, and continued fever, are harbingers of her approaching end, the inevitable termination of this scene of pain."

853. Where but one ovary is affected by the disease, menstruation may not be disturbed; cases are even reported in which

conception occurred, and in which gestation went on the usual time, the female being delivered of a healthy child, though the malignant growth was of considerable size. Cancer of the ovaries frequently occurs with ovarian dropsy, and in many cases it has existed with it without being detected until ovariotomy was being performed.

854. *Diagnosis.*—In the early periods of the disease, it can not be distinguished from non-malignant growths of the ovary; but after it becomes fully developed, the severity of the symptoms will generally be sufficient to make the distinction. The diagnosis of the situation of the disease may be effected in the manner already pointed out, when describing fibroid tumors of the uterus, etc.

855. *Treatment.*—Active medication in this disease would be exceedingly injurious; no measures can be resorted to with the faintest prospect of effecting a cure. The treatment pursued should be directed to sustaining the general health of the patient, and to palliate as far as possible her sufferings. Dr. Churchill recommends, both in cancer and fibroid tumors of the ovary, when they have enlarged so as to produce compression in the pelvis, to push them above the brim, and in this manner relieve the mechanical symptoms.

CHAPTER XIII.

PUERPERAL FEVER.

856. Puerperal or child-bed fever is one of the most dangerous diseases to which the parturient female is liable, and, though it is not of unfrequent occurrence, both sporadically and as an epidemic, yet we find that scarcely any two writers on the subject agree in regard to the pathology of the disease. This discrepancy in the opinions of writers upon the subject has doubtless arisen from the fact, that in the different epidemics of the disease, it varied greatly, not only in the phenomena which it presented during life, but also in the lesions which were found upon post-mortem examinations. Still, from reading the different treatises on the disease, notwithstanding the difference in the opinions of the writers, the mind will be forcibly impressed with the fact, that the disease itself was the same, though, from local causes or other circumstances, its manifestations were different. The opposite plans of treatment followed by different writers, do not appear to have been founded on any actual difference in the disease, but upon a pre-conceived theory of its character.

857. It is not worth while, in the short space that I have to devote to the description of the disease, to enter into a consideration of the many theories advanced in regard to its nature, as I think that each of my readers will be able to obtain a correct knowledge of it from the chapter on its pathological anatomy.

858. *Causes.*—The predisposing causes of puerperal fever are such as depress the vital powers of the system, and lead to unhealthy action in general. Among these might be named, low and ill-ventilated abodes, deficient food, intemperate habits, anxiety and a desponding state of the mind, etc. These causes have reference, however, principally to sporadic cases; for, when the disease prevails as an epidemic, nearly every puerperal female within the affected district suffers from an attack. In these

epidemic visitations, the disease attacks alike the rich, in their well-provided lying-in apartments, with all the attention that could be desired, with every comfort and convenience, and the poor, in the hovel or the cellar, without any convenience or attention.

859. The exciting causes of the disease, when it does not prevail epidemically, are, an exposure to cold or to dampness, imprudence in rising from the bed at too early a period, in taking improper food, stimulants, etc. Retention of a portion of the placenta is also given as a cause of the disease, the suppression of some accustomed excretion, etc. Of the exciting causes of epidemic puerperal fever we know but little. It has been ascribed by some authors to the state of the atmosphere; by others to a contagion carried from one parturient female to another by the physician; and by still another it is considered to be an erysipelatous inflammation which may be communicated either by the peculiar constitution of the atmosphere, or by contact with the morbid product of the disease, carried either upon the hands or clothes of the practitioner.

860. This brings us to the consideration of the contagious or non-contagious character of the disease, about which so much has been said and written, and upon which some of our most eminent medical practitioners are at variance. Among those who affirm the contagious character of the disease, might be mentioned Drs. Ramsbotham, Denman, Burns, Hamilton, Blundell, Gooch, Lee, and others; and an equally eminent list of obstetricians might be named who oppose it. Without entering into the discussion of this matter, however, I will give the views of Dr. Meigs on this subject, in which I place the most implicit confidence, from the known accuracy of his observations, and from his extensive experience. He says, "I have practiced midwifery for many long years. I have attended some thousands of women in labor, and passed through repeated epidemics of child-bed fever, both in town and hospital. After all this experience, however, I do not, upon careful reflection and self-examination, find the least reason to suppose that I have ever conveyed the disease from place to place in any single instance. Yet for many

years I carefully considered whether such a transfer by a third person might be possible, and carefully read the statements of various authors to that effect. In the course of my professional life, I have made many microscopic researches of child-bed fever, but never did suspend my ministry as accoucheur on that account. Still I certainly never was the medium of its transmission. I have, in numerous instances, gone from the bedside of women dying of child-bed fever, whether sporadic or the most malignant degree of epidemic, without making my patients sick. I have also endeavored to assist my brethren when they had such cases and I had none. In a series of labors, 468 in number, and beginning with No. 1, I find that Nos. 18 and 19 were affected, and that No. 18 died with child-bed fever; No. 31 was sick, but recovered; Nos. 195 and 259 were sick, but recovered; but 291 died, as did also 293. Nos. 332, 339, 435, 444, were attacked, and recovered. The above 13 cases were in 468 labors, of which 3 died and 10 recovered. Now, if I was the medium of contagion for any one of that series of 468 confinements, why did I poison them in the ratio and order above set forth; and why did I not communicate the disease in more than 13 out of 468 cases? What became of my nebula from 31 to 195; to 259, and between 291 and 435, and so to the end, or 468? Such a table is far more easily explained by regarding the falling-out of the cases as coincidences and accidents, than as material causations, through a private pestilence."

861. The believers in the non-contagious character of the disease, do not, however, ignore the fact that suitable attention and care on the part of the practitioner should be paid to cleanliness, etc., as there can be no doubt of the virulent character of the morbid matter produced by the disease, and that if brought in contact with tissues that will absorb it, it will reproduce the disease. Thus, when attending cases of puerperal fever, the following rules should be strictly observed. 1. That after examining any case of this disease, the hands should be carefully washed with soap and water, the nails cleaned, and kept pared short. And after making an autopsy on any dead body, his hands should be washed with a solution of chloride of lime until the cadaveric odor had entirely disappeared from them, and it would be better to com-

pletely change his dress. 2. That when it is possible, the practitioner should visit first his other patients, and afterward the cases of puerperal fever, and that if this can not be done, he should first have his clothes well aired, or change before visiting other parturient cases.

862. From the facts before us, we have good reason to believe that puerperal fever arises either from the absorption of a morbid material generated by a local inflammation, the primary disease being local; or that, in epidemics of the disease, the circulating fluids are first affected, the primary disease being general, while the local inflammation is secondary, or the effect of a morbid condition of the blood. In the first instance, the disease usually commences as a metritis, though sometimes as an inflammation of the peritoneum, or the uterine appendages, the first symptoms presented being those of acute local inflammation; but as the disease advances, the constitutional affection may become so marked that it will present all the characteristics of the malignant typhoid fever, so often met with in epidemics; this is the sporadic form of the disease. In epidemics of the disease, in the most of instances, the affection of the blood, as before stated, is the primary affection, which has a tendency to localize itself in the uterus and its appendages, owing to their great susceptibility to disease after parturition; even in this case the secondary local inflammation has always a tendency to aggravate the general disease.

863. I do not consider that it is necessary for practical purposes to try to point out the distinctions between the several seats of the local inflammation, further than to give the pathological changes in the different structures; all that we wish to determine in practice is, whether puerperal fever exists, and its form, whether merely inflammatory, the constitutional effect or fever being caused by the local inflammation, or whether it is typhoid, the blood crasis being affected; in other words, whether the fever is the result of the natural refection of the system, or whether it is the result of a septic condition of the blood.

864. *Pathological Anatomy.*—In considering the post-mortem appearances presented by puerperal fever, we have to look: 1. To the lesions of the uterus. 2. Of the veins and lymphatics of

the uterus. 3. Of the peritoneum. 4. Of the uterine appendages, the ovaries and fallopian tubes. 5. Of other organs incidentally involved by the puerperal process. In reference to the comparative frequency of these lesions in different organs, the following tables will be found interesting:

Inflammatory Lesions in 371 Fatal Cases of Puerperal Fever.

(FROM DUGES.)

Peritonitis was observed in.....	266 cases.
Metritis, or pus in veins, etc.....	200 "
Ovaritis	48 "
Gastritis and Enteritis.....	4 "
Pleuritis	40 "
Pericarditis	6 "
Arachnitis	1 "
Pus in Muscles or Joints	8 "

Inflammatory Lesions in 222 Fatal Cases of Puerperal Fever.

(FROM TONNELLE.)

Peritonitis was observed in.....	193 cases.
Metritis and Ovaritis.....	197 "
Pus in the Uterine Veins, or Lymphatics.....	112 "
Gastritis and Enteritis.....	6 "
Pleuritis	43 "
Pneumonia.....	21 "
Pericarditis and Hydro-Pericarditis.....	1 "
Pus in Liver, Pancreas, Muscles, etc.....	19 "
Pus in Joints.....	12 "

865. These tables show that in a large majority of cases, the disease locates itself in the uterus or peritoneum, or in other words, that the local disease is a metritis or peritonitis; that the ovaries are not near so liable to be affected, and the general nature of the disease, as seen in the frequent affection of other portions of the system. In the separate consideration of each of these morbid processes, I will depend principally on the description of Prof. Rokitansky, who has probably examined more cases of this disease than any other writer.

866. *Puerperal Endometritis*.—Prof. Rokitansky considers this affection to be invariably an exudative process, varying, however, greatly, as it regards the plasticity of the inflammatory exudation; in some cases of pure inflammation, the exudation being organizable like that in croup, while in others, it is a putrid inorganizable matter. He says:

867. "In certain cases, we find the internal surface of the uterus lined by a yellowish or greenish dense exudation, of greater or less thickness and extent; either in small patches, or investing the entire uterus, and either firm or loosely agglutinated, and occasionally partially or entirely detached from the subjacent tissues, so as to appear corrugated or plicated. The uterine mucous membrane under this coating is found reddened, tumefied, and slightly softened; the free parts are discolored, and invested with a dirty reddish or brownish secretion, and with remnants of the deciduous membrane. The exudation generally interpenetrates largely the exposed raw tissue of the placental portion of the uterus, and causes it to assume a peculiar ulcerated appearance. This is the form of inflammation usually seen in sporadic cases of the disease, in those marked by high inflammatory symptoms; the next described, is the condition met with in epidemics of the disease, or where it assumes a typhoid character.

868. "In other cases, the exuded matter is a gelatinous, purulent dirty yellow, loose and easily detached layer, beneath which, the internal stratum of uterine tissue appears spongy, infiltrated, soft, and may be easily detached in the shape of a dirty yellowish red, or partly greenish and brownish pulp. The internal surface of the uterus presents, in addition to the exudation, a glutinous secretion of a similar tinge.

869. "Again, the internal surface of the uterus may not present a trace of coagulable lymph, but be invested by a purulent sanguous and very discolored exudation, beneath which, we find the uterine mucous membrane infiltrated, in more or less extensive or circumscribed patches, with a similar product; and it may either be easily removed in the shape of a thin and much discolored pulp, or it has already become detached, and is mixed up with the contents of the uterus, in the shape of a friable discolored floc-

culi. In the place of the destroyed tissue, we occasionally discover the products of a reëactive process, in the shape of a more or less consistent sero-purulent secondary exudation."

870. "Again, the internal layer of uterine tissue may be covered with a thin opaque or more dense, pale-green or brownish, or dark-chocolate or coffee-colored product, beneath which, it is converted to a greater or less depth, into a loose, infiltrated, fetid pulp, of a similar tint. This condition, which differs from ordinary sphaecelus, has been termed putrescence of the uterus."

871. These various morbid appearances correctly mark the violence of the general disease, the plasticity of the exudation depending entirely upon the condition of the blood; thus, when the disease presents a simple inflammatory character, the exudate will be coagulable lymph, but as it assumes the typhus character, the exudation gradually loses this character, until it presents the unorganized dark fetid product.

872. According as the disease attacks the uterus sooner or later after parturition, the uterus will be found more or less enlarged, its involution being stopped when attacked by inflammation; and it will be more or less relaxed, softened, and infiltrated. Thus, if the inflammation commences two or three days after delivery, it will be as large as an infant's head; but if several days have elapsed, it may not be more than two, three, or four times its natural size.

873. *Inflammation of the Veins and Lymphatics of the Uterus.*—"Uterine phlebitis is generally a primary affection, originating in the open mouths of the veins at the insertion of the placenta, and caused as well by their laceration, as by contact with the external atmosphere, with the traumatic secretion of the part, and with the product of exudation on the internal surface of the uterus. It is either confined to a small portion of the veins, or it spreads over the greater part of the veins of the uterus belonging to the spermatic or uterine system of vessels. In the latter case, a secondary inflammation of the trunk of the spermatic vein, brought on by coagulation of the blood, may, on the one hand, extend through the vena cava to the right auricle, or on the other, along the iliac and crural veins, to the cutaneous veins

of the lower extremity; in this case, the symptoms of phlegmasia dolens are induced."

874. "If incisions be made in various directions from the point of insertion of the placenta, to the lateral parieties of the uterus and broad ligaments, a large number of veins become apparent, which are dilated and varicose, and filled with yellow or greenish-yellow viscid pus, or even with chocolate-colored sanies. Their orifices at the placental portion of the uterus, are either closed up by loose pale coagula, or they are covered over with an exudation which attaches itself to the spongy tissue of the raw surface, or, lastly, they are exposed so that their contents exude on the application of a slight pressure. The coats of the veins are relaxed and pale, the lining membrane is opaque, and discolored by the contents of the vessels, and after a protracted duration of the disease, it appears tumefied, thickened, partially gangrenous and ichorous. The tissue surrounding the veins, and especially the cellular tissue at the lateral portions of the uterus, is infiltrated with a yellow gelatinous or purulent matter, which is much discolored if the contents of the veins are ichorous; the tissue is relaxed, soft, friable, and lacerable. At different points there are abscesses of greater or less dimensions, which not unfrequently burst internally, and discharge their contents into the uterus."

875. Inflammation of the uterine lymphatics is of much less frequent occurrence than the same disease of the veins, and is generally complicated with the latter. When it occurs, the lymphatics on each side of the uterus, in the broad ligaments, and passing up with the spermatic veins, may be observed dilated and varicose, the coats of the vessels thickened and firm, and of a pale color, and they contain a yellow, yellowish-green, purulent fluid. Sometimes they are so much distended as to present the appearance of small abscesses; by the distension of the lymphatics, their course may be traced from the uterus to the neighboring lymphatic glands, which are sometimes similarly affected.

876. Though inflammation of the veins and lymphatics may occur as the sole and primary disease, yet in a very large majority of cases it is found in connection with metritis.

877. *Inflammation of the Peritoneum.*—We have already seen that peritonitis occurs in about six out of every seven cases of puerperal fever, and yet it rarely exists as a separate primary affection. It is most frequently found occurring with metritis, with metrophlebitis, ovaritis, and inflammation of the uterine lymphatics.

878. “Puerperal peritonitis is not unfrequently limited to the peritoneal covering of the uterus and its appendages, when it presents more or less redness, with more or less distinct congestion and a thin partial exudation, or a more dense and extensive layer of a viscid and consistent or loose and fluid secretion.”

879. “We not only find the peritoneal covering of the internal sexual organs attacked in this way, but also the peritoneum of the entire hypogastric abdominal region. The disease may even spread over the whole parietal and intestinal peritoneal lamina; the symptoms, however, predominating on the peritoneum of the internal sexual and adjoining organs. The entire peritoneum is often uniformly involved in the disease, not only without any predominance of the symptoms in the sexual organs, but sometimes even with an apparent subordination of these symptoms.”

880. The products of these processes vary very much; they may be firm, yellowish-gray concretions, loose, yellowish, membranous, grumous, gelatinous, or fibrinous coagula, which glue the intestines to one another, or to the parieties of the abdomen, or they may be yellow and greenish-yellow, thin, sero-purulent or thick purulent, dirty green and brownish, red, hemorrhagic, thin, opaque, sanguous effusions, the result of septic peritonitis. The product is sometimes very limited in amount, and may merely present a thin covering of the internal sexual organs, or a few membranous or fibrinous floceuli of coagulable lymph, scattered through the abdominal cavity; but in the case of universal peritonitis, it is generally extremely copious, whatever the particular variety of the product.”

880. Puerperal peritonitis, no doubt, in a majority of cases, arises from an extension of the inflammation of the uterus or its appendages by a contiguity of tissue, though it may occur as the primary disease. Prof. Rokitansky thinks that the disease is

often, and even generally, the result of a primary condition of the blood of the female, which predisposes to exudative processes, and is totally distinct from the physiological tendencies of the blood during pregnancy.

881. *Puerperal Ovaritis.*—Inflammation of the ovaries is not of near so frequent occurrence in puerperal fever as the lesions heretofore described; it is generally observed as a complication of inflammation of the other parts heretofore described, though it may exist as the primary disease.

882. We have seen, when describing simple inflammation of the ovary, that the disease was most frequently confined to the Graafian follicles, but in the puerperal inflammation it involves the entire structure of the ovary. The puerperal process in the ovary resembles that described as occurring in the uterus, the plasticity of the inflammatory product bearing a direct relation to the condition of the circulating fluids.

883. The ovary is always more or less enlarged, of the size of a hen's or goose's egg, and presenting the various changes which have been heretofore mentioned. Thus, "the deposit may be serous, or fibrinous and fusible, filling the tissues, and causing the follicles to present an opaque appearance; or it may be a yellowish, or reddish, gelatinous, viscid product, which is deposited in the stroma in large quantities; the latter being at the same time friable or semi-fluid, the follicles tumid, their coats swollen, and their contents opaque and flocculent; or, it may present various discolorations, and be at the same time collapsed and pulpy, its tissue distended by a dirty yellowish-brown, brownish-green, chocolate-colored fluid, or converted into a fetid pulp."

884. Puerperal inflammation of the ovary sometimes terminates in suppuration and the formation of an abscess. It may commence at separate points, which gradually coalesce, or it may be set up in a single spot and gradually involve the entire structure; these abscesses sometimes attain a considerable size. "It is sometimes borne for a long time without marked symptoms, and nature does her utmost to prevent a free discharge of it into the peritoneal cavity; for adhesions are formed between the ovary and the adjoining viscera, either in consequence of peritonitis

having been combined with the inflammation of the ovary, or from circumscribed inflammations of the peritoneum having been set up in the course of the ovarian disease. When at last, the suppurative process has eaten away the fibro-serous investment of the ovary, and caused its rupture, the discharge follows, from a yielding of the adhesions into a circumscribed cavity; now partial inflammatory attacks of the peritoneum ensue, or the pus meets with an organ which presents firm attachments. In the former case, the circumscribed processes not unfrequently pass into universal peritonitis, or this is induced by an extravasation of the pus through the relaxed adhesions. Again, in either of these cases, the suppuration may extend to the adjoining viscera, and the contents of the abscesses be discharged outward, indirectly through a circumscribed peritoneal sac, or directly in the hypogastric or umbilical regions, or into a portion of the intestine, into the bladder or vagina.

885. *Summary of the Anomalies in other Organs, accompanying the above-described processes.*—I have already quoted freely from the writings of Prof. Rokitansky, but under this head I shall give his remarks entire, as it is probably the best description of the disease extant.

886. “Beside the changes which occur in the original seats of the puerperal processes hitherto examined, there are so many important and various anomalies in other organs and tissues, that it is not sufficient merely to give a supplementary account of the anatomical results, but that as copious an explanation of them as possible becomes necessary. We shall, in the first instance, describe and account for the general appearance of the body, and then arrange the separate morbid processes, as much as possible, in groups, according to their mutual resemblance.

887. “The dead subject presents a remarkable disfigurement of the countenance, tumefaction and discoloration of the external genitals, excoriation, ulcerative destruction of various characters, with or without laceration of the perineum, various vaginal discharges, tympanitic distension of the abdomen, a livid erythema of the common integument at different parts of the body, white and often large coalescing miliary vesicles on the thorax and

abdomen. Yellow, greenish, biliary, feculent, chocolate-colored fluids escape from the mouth.

888. "The abdomen presents, in most cases, even if the peritoneal inflammation has been slight or entirely absent, a tympanitic distension of the intestines; this symptom is most developed in universal peritonitis; the entire intestine is then so much distended by gases, that it causes impressions upon the uterus, and forces the epigastric contents of the abdomen into the cavity of the diaphragm, and with the latter into the thorax as far as the fourth and third ribs. The firmer the exuded (plastic) matter, the more firmly the intestinal coils and the other abdominal organs are agglutinated to one another and to neighboring organs. The coagulable lymph is chiefly contained in the lower segment of the abdominal and pelvic cavities, but also in the lateral parts of the abdomen, between the mesenteries and in the vicinity of the large epigastric viscera, within spaces that have become more or less circumscribed by the adhesions. It not unfrequently causes, especially on the surface of the liver, shallow depressions, and gives to the superficial layer of this organ, if of a purulent or sanguous character, a greenish, and to the spleen a blackish tinge. The reddening and vascularity of the peritoneum are generally inconsiderable; but most evident at those parts which are free from pressure, and take the form of narrow or broader striæ. The membranes of the intestinal canal are all tumefied, the interstitial cellular tissue infiltrated, the layers easily distinguishable and lacerable. The intestine generally contains, in addition to a large quantity of gas, a yellow, serous, feculent fluid, which mounts up to the duodenum and stomach. This fluid is in part the product of an exudative process that occurs in the greater part of the intestinal mucous membrane, and which we shall have occasion subsequently to examine more closely. The duodenum and stomach may also be found to contain a copious amount of yellowish-green or intensely bitter green biliary fluid.

889. "We have here to advert briefly to two symptoms that occur during the course of puerperal peritonitis, and which not unfrequently coexist—they are, vomiting of the biliary matters contained in the duodenum and the stomach, and of sero-feculent

matters from the intestine. The former is to be explained by the paralysis of the muscular coat of the intestine, caused by the peritoneal exudative process, and the fixation of the intestine by plastic exudations; it commences at the duodenum and the stomach, the peritoneal covering of which generally remains unattacked. The latter is caused by the exudative process, and the consequent irritation of the intestinal muscular coat which forms a counterpoise to, and even counteracts, the paralysis at some points; it is the more frequent and the more considerable, the less marked the paralyzing influence of the peritoneal affection is.

890. "Almost all organs appear in a state of relaxation, which is proportioned to the primary or secondary dyscrasia of the blood, and to the extent in which the blood has become deprived of its fibrine by the fibrinous exulations caused by inflammations of the peritoneum, the pleura, etc. It is owing to a moistening or imbibition of the tissues with the attenuated serum of the blood, which easily exudes through the vascular coats, and is for the same reason coupled with pallor or discoloration, owing to the coloring matter which adheres to the serum. In the abdomen we find that the kidneys and the liver are chiefly distinguished by the softening, pallor, or pale-red discolored, oedema and imbibition, relaxation and friability of their tissues. In the thoracic cavity, the lungs are chiefly affected by these and similar deviations; the muscular portion of the heart, too, is, like the other muscles, and especially those that are involved in the peritoneal inflammatory process, soft, pale, moist, and lacerable. All the serous membranes and the lining membrane of the vessel are infiltrated with serosity, and are more or less reddened, and the serous cavities contain various quantities of a transuded, pale, or dark-red serum. The brain alone, as in numerous other allied processes, e. g. in typhus, forms an exception, inasmuch as it appears denser and harder, drier and paler than usual.

891. "The spleen is very frequently, though not always tumefied: it is so particularly in secondary disease of the blood, whether or not accompanied by the secondary processes (deposits), that we shall subsequently have to notice. The lungs are reduced in size, and denser, in consequence of the upward pressure exerted

by the contents of the abdomen; their inferior lobes are of a dark-purple color, and in a condition of hyperæmia.

892. "We now proceed to enumerate the separate morbid processes in the different organs, and point out their relations to the original puerperal disease.

893. "Our first attention is due to the exudative processes on the various mucous and serous membranes. That affecting the intestinal mucous membrane is of particular importance. The entire tract is generally involved; it is but slightly reddened, and commonly exhibits a thin, watery, serous, or viscid-gelatinous, or gelatino-purulent or genuine purulent product; the tissue fuses, and the sub-mucous cellular tissue is more or less infiltrated. In this manner the diarrheas of the puerperal state are established. The exudation is rarely of a firm, fibrinous, or croupy nature, but most commonly its serous character predominates, and this is more the case the larger or more fibrinous the product, resulting from the coëxistent attack of peritonitis. In certain cases, the process that takes place on the mucous membrane of the colon assumes a dysenteric type, and, as in the above-named forms, corresponds to the exudation upon the internal surface of the uterus or to the product of metrophlebitis. Similar processes, though generally accompanied with a coagulable product, are occasionally discovered on the mucous membrane of the stomach, the oesophagus, and the bladder, and in the lungs, in the shape of (partial) aphous pneumonia; this is chiefly the case when the blood has not been exhausted of its fibrine.

894. "Among the exudative processes that take place on serous membranes, the most frequent, after that occurring on the peritoneum, is pleuritis, which is often coëxistent with peritonitis; pericarditis is of less frequent occurrence. We also meet with exudations in the synovial bursæ, and especially in that of the knee-joint, the sterno-clavicular and humeral articulations, and, lastly, in the capsule of the aqueous humor. The exudations are very copious, fibrinous, and purulent. A thin, soft exudation is often found upon the dura mater, accompanied by a slight reddening of the latter.

895. "All these processes may be variously combined, and

they are dependent upon the primary or secondary disorganization of the blood, and especially upon that caused by the absorption of pus in metrophlebitis.

896. "Next in order come the processes dependent upon secondary phlebitis of the larger veins, and of the capillary venous systems of various organs and tissues.

897. "The former are generally developed in the vicinity of the original morbid affection, as in the plexus pampiniformis, the trunk of the internal spermatic vein, the internal iliac and crural veins; though they frequently, too, are generated at a distance, as in the cerebral sinuses and the pulmonary artery. Thesé give rise to the so-called metastases or lobular abscesses, which we shall now proceed to examine.

898. "We often find larger or smaller circumscribed spots in the most various organs and tissues; the dark-red points of congestion, or small accumulations of pus or sanies, which we have repeatedly adverted to. They are remarkably frequent and numerous in the organs of sanguification, especially in the lungs and the spleen; they are next seen in the kidneys, and more rarely in the ovary; they are occasionally met with in the brain; in the thyroid and parotid glands; in all muscles, particularly in the heart; in fibrous tissues, as in the dura mater and the periosteum. Again, they are very common in the mucous tissue, especially of the bladder and the intestines; they occur throughout the cellular tissue, but they seem to predominate in the cellular tissue of the extremities, of the mediastina, of the neck, the iliac muscles, and the intestines and stomach."

899. "We have already demonstrated that these processes are genuine exudative processes, or that they consist in a coagulation of the blood within the capillaries (capillary phlebitis). In the latter case, the coagulum fuses in a manner corresponding to the disease of the blood, and to the deleterious matter absorbed into the blood, and forms a purulent sanguous fluid or gangrenous pulp."

900. "They may probably be invariably considered as the result of a secondary infection of the blood, of a poisoning of the blood by the introduction of some product from the original nidus

of disease, and particularly of venous pus and sanies in metrophlebitis. They consequently always give rise to purulent and sanious products, and terminate fatally as capillary phlebitis. They enter into various combinations with one another, and with the exudative processes occurring upon serous and mucous membranes. Owing to their position at the surface of the organs, we always find that pleurisy supervenes upon their occurrence in the lungs, and peritonitis upon their deposition in the spleen."

901. "A black softening of the mucous membrane of the fundus ventriculi, or of the esophagus, or of both at the same time, which is indicated during life, by the vomiting of black coffee-ground like matter, is of frequent occurrence. It not rarely reaches that degree of intensity, that the fundus of the stomach, and sometimes the diaphragm also, and the esophagus, with the adjoining cellular tissue and mediastinum are ruptured, and the fluid that would have been evacuated by the mouth is effused into the abdominal and thoracic cavities."

902. "After difficult labor, the cartilages of the pelvic synchondroses are liable to inflammation, in consequence of the traction exerted upon them, and if the blood has assumed a septic condition, the inflammation may terminate in gangrenous fusion of the cartilage, the latter being converted into a dirty brown and very much discolored fluid, contained within the investing ligamentous tissue."

903. "The blood contained in the cavities and large vessels presents various and more or less evident changes. Its fibrine may be converted into consistent, viscid, greenish-white, or yellowish coagula; or after previous extensive discharges of fibrine, it may be attenuated, watery, exuding through the coats of the vessels and the adjoining tissues, and presenting but few and trifling, gelatinous, soft coagula. Again, after previous purulent or sanious absorption, it is of a dirty brown-red or chocolate color, viscid, glutinous, depositing dirty-white, opaque, fibrinous concretions, which in the heart form numerous ramifications, or presenting dark-red coagula, which are paler at the surface, and fusible. Lastly, if the disease has run a rapid course, the blood is much reduced in quantity, and even without defibrination having taken

place, it is attenuated and discolored, and transudes all the tissues. The fibrine is sometimes found deposited on the valves of the heart in the shape of vegetations, without the demonstrable occurrence of previous pericarditis. The severe jaundice affecting women during the puerperal state, is always dependent upon pyæmia, and never upon an appreciable derangement of the liver."

904. *Secondary Terminations.*—“Puerperal peritonitis generally terminates in the same manner as ordinary peritonitis; we notice, as particularly important, the unfavorable terminations in suppurations—phthisis—of the peritoneum and the adjoining tissues (ulcerative perforations of the diaphragm, the abdominal parieties, the intestines, the bladder, the vagina, etc.) and in peritoneal tuberculosis. The exudations upon the internal sexual organs may become converted into cellular tissue, and by fixing the tubes in an unfavorable position, even without occlusion of the fimbriated extremity, cause sterility.”

905. “The exudative processes occurring on the internal surface of the uterus, as well as the exudation in the uterine parenchyma accompanying the former and metro-phlebitis, not unfrequently degenerate into suppuration of the uterus, and the consequent purulent and sanguous abscesses, extending chiefly from the point of insertion of the placenta in various directions, may discharge themselves into the peritoneal cavity. The affection generally runs its course as acute uterine phthisis.”

906. “A very remarkable and important result of the exudative processes on the internal surface of the uterus is tabes of the uterus, which is manifested by extreme brittleness and friability of the uterine fiber. The uterus very rarely attains such a degree of involution as to resume the size of the unimpregnated organ; it generally remains considerably enlarged, of the size of a duck’s egg, or a man’s fist; its tissue at the same time is porous, of a pale red, and at some parts of a slate color; the insertion of the placenta continues visible, by the relaxation of the tissue and the irregularity of the inner surface, or the mucous membrane is at this place invested by a yellowish-white ashy substance, the remains of the exudation, and generally presents a retiform appearance.”

907. *Symptoms.*—The symptoms of puerperal fever vary very much in different cases and in different epidemics of the disease; this variation in different cases, depends not only upon the extent of the local inflammation, on the organ or organs attacked, but also on the constitution and habits of the patient, and the degree of constitutional affection. However much the symptoms may vary in different cases and at different times, yet they are so marked as a general rule, and indicate so distinctly the character of the pathological lesions, that there is very little danger of the disease being mistaken. Instead of considering separately the symptoms presented by each of the different local inflammations described as metritis, peritonitis, etc., all that is necessary for practical purposes, will be to consider the disease as it presents the *inflammatory* or *typhoid* form, or as the inflammatory or typhoid symptoms predominate.

908. *Puerperal Fever presenting more or less inflammatory symptoms.*—In a large majority of cases, in the commencement of the disease, whether it is sporadic, or occurs epidemically, if the local inflammation be the primary disease, it will present the inflammatory form. In from two or three days to a week after delivery, the patient will complain of a sense of lassitude or weariness, with sometimes a sensation of soreness and weight in the hypogastric region, and a feeling, as she will express it, "as if she was not getting along well." This is shortly succeeded by rigors of greater or less severity, either partial or general, to which inflammation succeeds; these rigors or chills may be so slight, that the patient would not notice them without her attention was especially called to them, and in this case, the fever would appear to have been the first symptom. As soon as the fever becomes developed, the face is flushed, the skin hot and dry, there is considerable thirst, sometimes nausea and vomiting, and a more or less violent pain across the forepart of the head. The pulse during the chill is full and strong, and somewhat accelerated, and as the fever becomes developed, it is hard and quick, varying from 110 to 140 in a minute, and the respiration is hurried in proportion. The secretions are arrested or diminished in quantity:

the tongue is coated with a white fur, and the mouth clammy, the urine is high colored and acid, and the bowels confined.

909. With the development of the fever the local pain becomes more or less marked, according to the seat of the inflammation; if the peritoneum is affected, it is generally very severe, and commences first in the iliac or hypogastric regions, where it may continue, or it may involve a large portion or the entire abdomen. The tenderness on pressure is exquisite, and as the inflammation extends, it may become so acute that the patient can not bear the slightest pressure, not even the weight of the bed-clothes. In those cases in which the peritoneum is not involved in the disease, the inflammation being confined to the uterus or ovaries, the tenderness is not near so great, the pressure having to be made deep, so that the fingers make pressure on the inflamed organs before the pain is much increased. The pulse likewise varies somewhat according to the seat of the inflammation, for when the peritoneum is involved, it is small and incompressible—wiry, while if the inflammation affects the uterus and ovaries alone, it is generally hard and full. It must be recollected, however, that peritonitis exists in six out of every seven cases of puerperal fever, either as a complication of metritis, or as the primary disease.

910. These inflammatory symptoms may terminate in a longer or shorter time, in the typhoid form. Sometimes they appear only for the first few hours, or they continue for two, three, or four days, or they may continue to the termination of the disease either in recovery or death.

For the first day or two of the disease, the lochia may continue but grow gradually less and less in quantity, or in some rare cases it may be suppressed from the commencement, or it may continue throughout the course of the disease. The secretion of milk is in the great majority of cases suspended in the early part of the disease, and the mammae become flaccid; though in a few cases reported this secretion has continued the entire course of the disease.

911. As the disease advances, all the symptoms mentioned become aggravated, the local pain and tenderness increases, the

patient lies upon her back, with the thighs drawn up to take off the tension of the abdominal muscles; the least motion increases the pain, the breathing becomes shorter and laborious, delirium sometimes sets in, there is subsultus tendinum, and hiccough, and death soon terminates her sufferings.

912. It is very rarely that puerperal fever retains its inflammatory character to the last, yet it sometimes occurs, and these cases are marked by the same symptoms that characterize the synochal grade of fever.

913. *Typhoid puerperal fever.*—By the term "typhoid" we understand a prostrated condition of the system, the vital power being so overpowered by the disease that a high inflammatory reaction is impossible. In this form of the disease there is a greater or less affection of the blood mass (septic condition of the blood) caused either by the epidemic influence in this case being the primary disease, or from the absorption of some morbid material from the seat of the local inflammation (the endometritis, metrophlebitis, or peritonitis). We can readily understand why puerperal fever in the majority of cases should sooner or later present these symptoms of great depression of the vital power. More or less exhaustion always succeeds to parturition, from the intense degree of muscular power required to expel the foetus, the circulation is likewise more or less disordered from the rupture of the relations existing between the mother and the foetus in utero, and not only this, but at this time without the excretions are free, there is more or less matter approaching a state of disorganization circulating in the blood, which needs but the stimulation of the epidemic constitution of the atmosphere heretofore spoken of, to produce that septic condition of the blood which is the essential condition of typhus. And not only this, but the uterine organs themselves present the very conditions necessary for the absorption of morbid materials generated by the inflammatory process; there is often ruptures or lacerations of the uterus or the vagina, through which any putrid discharges may be readily absorbed, and the uterus presents at the insertion of the placenta a large traumatic surface, with the open mouths of the utero-placental veins constantly in contact with the contents and

secretions of the uterine cavity. Any morbid material entering the circulation in this manner is liable to propagate the same morbid changes in the blood, i. e., to cause a disorganization of any material in the blood not sufficiently vitalized to resist the morbid influence. It is proved by experience that this morbid process in the blood is propagated in the same manner that *diastase* or yeast affects any albuminous matter with which it is placed in contact. We have a good illustration of the effects of the absorption of putrescent materials, even in very small quantity, in wounds made during dissection or in making post-mortem examinations, the absorbed material exciting such chemical changes in the constitution of the blood, that its whole character is speedily changed, and its vital properties are altogether destroyed.

In a large majority of cases as already stated, the disease assumes the character above described, the constitutional affection being the principal disease; sometimes two, three, four, or more days elapse before the disease assumes this character; at others it immediately succeeds the first inflammatory reaction, and at others it is manifest in the commencement of the disease.

914. In the two first instances, the first symptoms are those heretofore described, but in a longer or shorter time they are succeeded by symptoms of prostration; the pulse becomes small, weak, and contracted, though still rapid, the face pale, the tongue more or less coated with a dark yellow, or brown fur, or it may be clear, red, and dry, there is nausea and slight efforts at vomiting, diarrhea, etc. There is a morbid heat or dryness of the skin, or in some rare cases there is a constant clammy perspiration; the countenance presents a marked change, it is sometimes suffused, more frequently sallow, dejected, ghastly, and indicative of extreme distress; the eyes are sunken and inexpressive, and a dusky livid ring may be observed around the under lid.

915. The degree of local pain varies very much, even when there is peritonitis; sometimes it is very severe, at other times it appears to depend wholly upon the tympanitic distension of the abdomen. The frequency and duration of pain in puerperal fever

where the peritoneum was involved, was carefully observed by Dr. Ferguson; in 173 of his patients he found that

The number of his patients that had no pain was 19

“	“	“	“	“	51
“	“	“	“	2 days	“ 48
“	“	“	“	3 “	“ 22
“	“	“	“	4 “	“ 18
“	“	“	“	5 “	“ 6
“	“	“	“	7 “	“ 5
“	“	“	“	8 “	“ 4

916. Shortly after the disease is established, the abdomen becomes tympanitic, and in some instances becomes very much distended and tense, and in a more advanced stage the presence of effusion may be detected.

917. When the disease assumes a low or malignant type from the commencement, the first indication of the impending mischief, says Dr. Copeland, "is the great rapidity, softness, and weakness of the pulse, often attended by pain and tenderness at the epigastrium, by sickness and vomiting, followed by general distension and pains darting through the abdomen. But in the majority of cases there are neither chills nor rigors; in a few, a feeling of coldness only; and in still fewer, slight rigors. In this state of the disease the patient soon becomes despondent, predicts her dissolution, is afterward apathetic, and makes little or no inquiry for her infant. The milk and lochia are either little or not at all diminished, or are more than usually abundant. The abdominal pain and distension are sudden and quick in their action; but the pain soon ceases, the distension remaining, and afterward changing its character, if the disease continues above two or three days. The tongue, from the commencement is flabby, broad, and slimy, or covered by a mucous or creamy coating; the pulse is usually from 120 to 140, or even upward, fluent, soft, or broad; and the general surface presents a lurid, dusky, or dirty hue, and is covered by a clammy or offensive perspiration. The countenance is pale and inexpressive, unless where the pain is acute, when it becomes anxious and covered with perspiration. The mind is but

little disturbed, beyond a state of complete apathy. As the disease proceeds, respiration is short, suspirious, or difficult; the pulse small, soft, or irregular; the bowels frequently relaxed, and the stools offensive, or passed without control. Distressing feelings of sinking, leipothymia, or restlessness supervene, and are soon followed by symptoms of impending dissolution."

918. At any period of the disease, the above-named symptoms may become complicated with those arising from pleuritis, gastritis or enteritis, pneumonia, etc. The occurrence of any of these complications alter the general symptoms of the disease, and they therefore vary greatly from this cause; they also vary much in different cases where no complications exist.

919. When the disease progresses toward a fatal termination, there is effusion into the peritoneal cavity, and with this effusion there is a remission of the local pain, but with this absence of the local pain the other symptoms are all aggravated. The pulse becomes small and weak, fluttering, and so rapid that it can scarcely be counted, the patient appears to suffer more, and there is a constant watchfulness; the tongue becomes dry and brown, and there is sometimes vomiting of a dark coffee-ground looking fluid: the patient retains her position on the back, and there is a constant tendency to slide down toward the foot of the bed; she picks at the bed-clothes, and appears to be unconscious of any thing that is going on about her, etc. Sometimes there is delirium, and when it occurs it may be looked upon almost as a fatal symptom.

920. But if the pulse be found less frequent and stronger, the skin cool and soft, the tongue cleaner, no nausea present, the thirst less, and the patient gets refreshing sleep, and can change her position and lie upon her side, we may hope for a recovery.

921. *Diagnosis.*—From the symptoms above named, and the time at which the disease occurs, (shortly after parturition) there are but two diseases, or morbid states, with which there is any danger of its being confounded; these are, hysteralgia, and a disease described by Dr. Ramsbotham under the name *acute tympanitis*, or false peritonitis.

922. It may be distinguished from neuralgia of the uterus by

the periodical exacerbations and remissions of this latter, and from the less degree of constitutional suffering. From severe and long-continued *after-pains* by the fact that in this the uterus can be felt to contract and harden with each pain, and that there is little or no constitutional suffering.

923. The diagnosis between what Dr. Ramsbotham terms acute tympanitis and puerperal fever must be very obscure, from the symptoms which he gives of the disease. He says, "The attack mostly commences two or three days after delivery, and is usually introduced by a rigor; this is often very severe, more so, indeed, than when it proceeds from peritoneal inflammation. It is a great mistake to believe that shivering is always indicative of the commencement of an inflammatory attack; for here, although not the slightest appearance of inflammation can be observed after death, the rigor is strongly marked. To this succeed great heat and dryness of skin, which also is often more intense than in peritonitis. I have already said, that in peritonitis the surface is sometimes soft and moist from the commencement; but this I never remarked in the affection now under consideration. The pulse rises rapidly in frequency, often beating one hundred and thirty or one hundred and forty strokes in a minute; sometimes it is fluttering and tremulous; at others, fuller and firmer than in peritonitis. The mouth is generally dry; the tongue occasionally furred, or it is harsh and red. The countenance becomes early changed, though not so anxious as in peritonitis. Most severe pain in the head is experienced, with intolerance of light and noise, uninterrupted wakefulness, and in many cases even delirium. Very early in the disease the abdomen swells inordinately and rapidly, becomes very tense and painful, and the transverse colon, particularly, can in many instances be distinctly traced; pressure aggravates the sufferings. The milk ceases to be secreted; the lochia are generally suppressed; there is great languor; an unwillingness to speak or take nourishment: the patient lies upon her back, with her legs drawn up, unsolicitous about herself, her infant, or her friends; the bowels are obstinately constipated. As the disease gains ground, the belly increases in size, pain, and tightness; the tongue becomes dry and brown; there is hiccough,

or vomiting of offensive matter, muttering delirium, subsultus tendinum, and most of the symptoms that denote the last stage of fever; but if recovery is to be expected, the swelling and tenseness of the abdomen subside; the pain gradually goes off; the pulse becomes slower; the tongue moister; the skin cooler and softer; there is no vomiting; the intellect remains unimpaired; and a desire is expressed for food; and the bowels act, together with the expulsion of a large quantity of flatus."

924. We have here a disease which, according to Dr. Ramsbotham, presents all the characteristics of puerperal fever, without there being any signs of local inflammation after death. This would go to prove the fact that puerperal fever is principally a disease of the blood, (a general or constitutional affection,) and not, as many writers would have us believe, a local affection.

925. As to the diagnosis between this and puerperal fever, we need not trouble ourselves, as they are certainly both the same, with the exception of the local inflammation, and require similar treatment.

926. *Prognosis.*—The prognosis in puerperal fever will vary according to whether it is sporadic, or whether it prevails as an epidemic, and according to the character of the epidemics, some that have occurred being very malignant, while others have been comparatively mild. In those cases that present the symptoms of acute inflammation first named, the prognosis will be much more favorable than in those presenting a typhoid character. And lastly, it will vary according to the period of the disease at which the treatment is commenced, and the energy with which it is followed up. In the language of Prof. Meigs, "If the nurse allow the precious moments of the forming stage to elapse before the alarm is taken, or if the physician, through inattention or failure in making the diagnosis, pursues, in the beginning, a feeble or erroneous practice, no human skill, sagacity, or devotion can be relied upon to rescue the victim, who has already begun to die before the first hand is extended for her rescue."

927. *Treatment.*—The indications to be fulfilled in the treatment of puerperal fever are, to subdue the local inflammation as soon as possible, and thus prevent the severe constitutional affection; to

stimulate and keep free the secretions and excretions, and thus relieve the system of all disorganized material as soon as formed; to neutralize or destroy the septic material as it is introduced into or formed in the blood; to rectify wrongs of innervation; and to support the strength of the patient by appropriate food, tonics and stimulants.

928. A careful practitioner attending a puerperal patient will be able to distinguish the disease at its commencement, or shortly afterward; for, as a general rule, it is ushered in during his daily attendance. But if an epidemic of the disease exists, careful directions should be left with the nurse or friends to apprise him of the first morbid symptoms. As soon as the disease is recognized, we examine the patient carefully to determine the initial lesion, and promptly adopt such means as are indicated. I am satisfied that this early attention will many times arrest the progress of the disease in its early stage, when, if neglected for a single twenty-four hours, the case would be most serious. The reader is already aware that I do not believe in allowing my patient to suffer even the usual aches and unpleasantries before, during, or after confinement, and I am always on the alert for these possible wrongs. What is described as an ordinary chill is followed by what the nurse calls milk fever, and the "busy practitioner" (a synonym for a careless or lazy doctor) takes it for granted that the nurse or attendant knows, makes a superficial examination, and comes back the next morning to find a fully developed puerperal fever. If it had been taken in time, the administration of Aconite with Macrotys, or other indicated remedy, and Chlorate of Potash or Sulphite of Soda, it might have been nothing but an ephemeral fever. I wish to say in this connection that "cleanliness is next [better than] to godliness," and the physician who allows his patient to lie in a bed befouled with decomposing blood or lochial secretion, or allows the vagina to remain clogged with decomposing blood or secretions, falls far short of his duty. I have seen these cases, and know that they are far too common. I recall one in which the second day following the chill the patient had a pulse of 130, with a temperature of 105°; was furiously delirious, with a dirty brown tongue, arrested secretion of urine, and exquisite tenderness of the abdomen—symptoms of a most grave attack. The intensely putrescent odor

coming from the bed caused me to make inquiry and an examination, and I found the clothes adherent to the vulva and thighs, the vagina packed with blood-clots as with a tampon, and the uterus distended to some extent with the lochial secretion. The removal was a most unpleasant job, and it was some hours before the uterus was wholly freed, but the thorough cleaning up, and washing with chlorate of potash, and its internal administration with tincture Aconite and Macrotys, were followed by rest and sleep, relief of the abdominal tenderness, and a disappearance of the puerperal fever. In a second case, with very similar symptoms, the removal of a small portion of placenta which had engaged in and closed the os, was followed by an abatement of all the symptoms.

929. I wish to call attention to the condition of the tongue in the early stage of the disease, as indicating remedies. In every case we want a good condition of stomach for the reception and absorption of medicine, for taking the necessary food, and for the relief of the sympathetic nervous system, always unpleasantly impressed by derangements of this viscus. We will sometimes find our case, even before the chill, with a pallid and *dirty tongue*, and the conviction will come to us that with this dirty mouth the ordinary remedies will fail to exert their usual influence. Here we give Sulphite of Soda in doses of ten grains every two hours, until the unpleasant condition is removed. In another case the evidence of atony, the heavily coated tongue at base, fullness and oppression in the epigastrium, and oppression of the nervous system, will suggest that it may be well to use an emetic. There is a case for Podophyllin, even the old-fashioned sharp dose, and we can hardly get along without it, but we must know our case. The face is full, the tissues full, the tongue full, and especially the cutaneous veins are full. Then we have our cases of irritable stomach, in which the nausea and vomiting are unpleasant features. In one case the sallow relaxed face and expressionless mouth with moist relaxed tongue say, Nux Vomica in small dose. In another the red contracted tongue, elongated, and especially red at tip and edges, is the evidence of irritation and determination of blood, and calls for counter-irritation over the epigastrium the small and frequently repeated dose of Aconite and Ipecac, in-

fusion of Peach-tree bark, or minute doses of Morphia with Bismuth. These are vital things, and should not be neglected.

930. In the selection of the sedative we are guided by our general rules—Veratrum if the pulse is *full and strong*, Aconite if it is *small*. As a rule, the Veratrum may be given with Gelsemium, Asclepias or Dioscorea, and the Aconite with Rhus, Macrotyls, Bryonia, or Belladonna. This is only suggestive of the associate remedy, as we are always guided by the symptoms. In some cases Veratrum may be given in large doses, (full, strong pulse, flushed surface), say—R Tinct. Veratrum, $\frac{3}{j}$; Water. $\frac{5}{iv}$; a teaspoonful every half hour or hour, until the pulse is brought down to its normal frequency, and then in smaller doses to maintain its influence. The Aconite is used in the usual small dose, gtt. v. to gtt. x. to water $\frac{5}{iv}$.

931. Gelsemium is indicated by the flushed face, bright eyes, contracted pupils, increased heat of the scalp, restlessness, and by scanty urine passed with great difficulty.

Asclepias exerts a most kindly influence in those cases in which, notwithstanding the high range of temperature, the skin is moist. The Eupatorium Perf. is employed in a somewhat similar case, the pulse being full, oppressed, and the patient complaining of dull pain in the head. Both remedies are associated with Veratrum.

Dioscorea is an admirable remedy in puerperal peritonitis, and when the intestinal canal is involved. It may be given with either the Veratrum or Aconite, the tincture being added to the preparation of these, or it may be given in infusion.

Rhus is indicated by the *burning* pain, dry and constricted skin, sharp pain in frontal region, especially in left orbit, and sharp stroke of the pulse. It is one of our most certain and valuable remedies, and will meet many unpleasant cases.

Macrotyls is the remedy indicated by uterine pains (as of labor), and by muscular soreness. It is especially useful in the forming stage of the disease, and will be replaced by other agents later.

Bryonia is indicated by the steady vibratile pulse, the tendency to implication of the serous membranes of the chest, as well as the peritoneum, and by the peculiar pain in the head, extending from forehead to occiput, especially on the right side. The right cheek is usually flushed.

Belladonna is indicated by dullness of intellect and inclination to sleep, and the development of coma. It is exhibited in the usual small dose with Aconite. I wish to call especial attention to the use of Chionanthus in those cases which show symptoms of jaundice, with pain in the region of the liver and stomach, and sometimes nausea and vomiting. Ten-drop doses of the tincture of Chionanthus every two hours will be found to give much relief and will sometimes arrest the progress of this disease.

932. Among the remedies which have been deemed specific in puerperal fever, I may name the *Potentilla Canadensis*, or cinquefoil. It may be given in infusion, or the tincture used in doses of ten to twenty drops every two or three hours, associated with the sedative.

933. *Antiseptics.* As the fever progresses those symptoms known as *typhoid* make their appearance. The reader will not understand that we have a typhoid fever, with disease of Peyer's glands, but only the evidences of sepsis of the blood and prostration that we observe in typhus and typhoid fevers. The word "typhoid" is here used as an adjective to denote a condition similar to that noticed in the fevers named. To meet these symptoms we use a class of remedies called antiseptics, and when especially indicated, we obtain definite results from them. We may here consider the following of this group—Sulphite of Soda, Muriatic Acid, Sulphurous Acid, Baptisia, and Chlorate of Potash.

I may premise by saying that the special evidences of sepsis, or typhoid disease of the blood, we find in the exudation upon the tongue. The tongue is moist and dirty—nasty—or the coatings have a tinge of brown, growing deeper as the disease advances. Bad odors—putrefactive—are also evidence of typhoid.

934. *Sulphite of Soda.* The indication for this remedy is the moist, pallid, *dirty* tongue. We give it in doses of from five to twenty grains every three hours.

Muriatic Acid. The indications for an acid have already been named—the deep red color of mucous membranes. The evidence of the typhoid condition is *brown* coating of the tongue, sordes on the teeth, nervous prostration, and pungent heat of surface.

Sulphurous Acid. This is a very feeble acid, and is not given to fulfil the general indications for an acid. We give it where there is normal color of mucous membranes, and where the dirty

coat and sordes show sepsis. It may be given in doses of ten to thirty drops every three or four hours.

935. *Baptisia.* It is not so easy to see the exact indications for Baptisia, yet it is one of our very best remedies, if the diagnosis is rightly made. There is a dull red coloration of skin where it has a free circulation, of the lips, and of the tongue and fauces; or, as we sometimes say, there is an *off-color* of the tongue—livid, purplish, dull red. In the advanced stage of the disease, the tongue is protruded with difficulty, is stiff, fissured, and bleeds, and the tissues of the mouth and fauces look full and lifeless. The pulse is oppressed, and the skin is dry, husky and lifeless. The excretions are frequently fetid. I prescribe—R. Tinct. Baptisia, gtt. x.; water, $\frac{3}{4}$ iv.; a teaspoonful every two hours, usually alternated with the proper sedative.

Chlorate of Potash. We may get a better idea of the special indication for this agent if we think of it as the remedy for the puerperal state. Given, offensive lochial discharge following abortion or delivery at full term, I use Chlorate of Potash. I use this remedy in *cynanche maligna*, and, as will be recollectcd, a characteristic symptom here is the putrefactive odor. So in the advanced stages of a fever, if there is this unpleasant odor of decomposition, I prescribe Chlorate of Potash, $\frac{3}{4}$ ij.; Water, $\frac{3}{4}$ iv.; a teaspoonful every two or three hours.

936. *Disinfectants.* We recognize the fact that a patient suffering from puerperal fever may be poisoned by the exhalations from her own body, by decomposition of the excretions in the room, and by dirt from any source. This is something that must be thought of and looked after in every case. Be sure that the bed coverings are kept clean; that the clothing of the patient is changed frequently; that the room is kept clean; that the chamber utensils are thoroughly cleansed after use. See that fresh air is admitted to the room, and that the foul air has a chance to get out (through an open fire-place, if possible, in which a small fire is kept).

937. But if bad odors develop, destroy them with antiseptics. If in the cellar or out-buildings, white-wash will answer; drains may also be limed, or Chloride of Lime may be used. The vessels about the bed may be washed in a solution of Chlorinated Soda, or Sulphurous Acid, and the air of the room may be disinfected

by a spray of Sulphurous Acid, or a solution of Chlorinated Soda. The air spray apparatus is now so cheap and good, that we can employ it more in these cases.

938. In malarial regions puerperal fever may be distinctly periodic, and require full doses of quinine, being careful that the patient is properly prepared for its use—having a soft open pulse, a moist cleaning tongue, relief of nervous irritation, and a skin inclined to moisture. These are the only cases in which the large dose of quinia will prove beneficial, and in all others it will most surely do harm. In the advanced stage of the disease, and when we have the fever under control, we may use small doses (one grain), as a stimulant, with good effect. Stimulants may be employed in the same cases, giving small portions properly diluted, and repeated sufficiently often to keep up the good effect.

939. The ordinary use of Opium and Morphia by mouth is to be avoided, as it acts unkindly both upon stomach and brain. I do not object to the "diaphoretic powder," in five-grain doses, when it is needed to give rest, if the stomach will take it kindly, and the pulse is soft; but when the necessity for the relief of pain is imperative, I prefer the hypodermic injection of Morphia. The medium quantity will be fifteen drops of a solution of grs. x. to distilled water $\frac{3}{4}$ j., and the best place for insertion will be the thigh or leg, though there will be many reasons for taking the arm.

940. Do not use cathartics unless specially indicated. It is well to open the bowels occasionally, but an enema is preferable to medicine by stomach, and this can be selected with reference to the condition of the bowels, especially as to the tympanitis. At first it may be a solution of compound powder of Jalap; then it may contain a small portion of tincture Xanthoxylum, or even turpentine; and lastly, it may be antiseptic, as with Chlorate of Potash or Chlorinated Soda.

941. To relieve the local pain, fomentations of Stramonium or of Hops may be used in many cases with great advantage; they should be applied as hot as they can be borne, and frequently changed, so as to keep up a continuous heat; careful directions should always be given to the nurse in regard to their application; for, if left on until they become cold, they will aggravate the disease instead of proving a benefit; or if they should be applied too wet, the patient's clothes as well as the bed will become damp

and make her uncomfortable. From the difficulty of having fomentations properly applied, several authors, among whom may be mentioned Gooch, Ferguson, and Locock, prefer a well-made Linseed poultice, as a constant application to the abdomen. The best local application with which I am acquainted, is the Tincture of Stramonium, diluted with four parts of water, kept hot on the stove, and three or four thicknesses of flannel wrung out of it and applied to the abdomen; in changing it, the layer next to the abdomen may remain, and the applications made upon it; in this manner the abdomen is not exposed.

942. Vaginal injections of warm water have been highly recommended as affording great relief in this disease; they not only assist in relieving the local pain and tenderness, but they also remove any morbid secretion from the parts, and thereby lessen the dangers of absorption. If the lochia or the discharge attendant on metritis be fetid, a weak solution of chlorinated soda may be used.

PHLEGMASIA DOLENS.

944. This affection has received and is known under various names, as, *phlegmasia dolens*, *phlegmasia alba dolens*, *œdema lactium*, *sparganosis*, *milk leg*, *white leg*, *swelled leg*, *etc.*, *etc.*, and as many theories have been advanced in regard to its character as it has names. It is a disease of the puerperal state, occurring generally between the fourth day and third week after delivery. It may arise after first pregnancies, though in a large majority of cases it occurs in females who have borne several children; it is also said to arise more frequently in women of a delicate constitution, and those who suffer from uterine irritation after delivery.

945. The disease consists in a colorless swelling of one or both legs, the left leg being said to be more frequently affected than the right; with swelling, there is pain, tenderness on pressure, and more or less fever. As to the pathological lesions causing these symptoms, there are various and conflicting opinions; some regard it as an inflammation of the veins of the thigh and leg, and hence one of its names, "crural phlebitis;" others, again, consider it a species of cellulitis, involving the cellular tissue of the leg, while others consider that the disease is confined to the lymphatics,

and others have combined these different lesions in varying proportions to suit their individual fancy. In support of the opinion that the disease was, as one of its names indicates, crural phlebitis, Dr. Robert Lee gives the following conclusions derived from post-mortem observations: "That the inflammation of the iliac and femoral veins gave rise to all the symptoms of phlegmasia dolens, and that the inflammation commenced in the uterine branches of the hypogastric veins, and thence extended to the femoral trunks of the affected side." Prof. Rokitansky's observations go to support, partially, this view of the subject, yet he appears to consider the cellulitis the prominent affection; he says: "Two lesions seem to be essentially connected with this affection. It either depends upon an inflammation of the veins of the inferior extremity, and especially of the crural vein, or upon an inflammation of the cellular tissue, which gives rise to the most various products. The latter form is particularly likely to cause the characteristic symptoms which a so-called sero-lymphatic or seropurulent product, i. e., fibrinous or purulent exudation, diluted by a large amount of serum, induces." Among those who considered that the lymphatic system of vessels were first affected, and that the disease was inflammatory, might be mentioned Drs. Denman, Ferrier, Caspar, and Dewees. The reasons for this opinion are well-given in a very able paper by Dr. J. D. Collins, of Kentucky; he says:

"From a careful investigation of the history and symptoms of this disease, I have been brought to the following conclusions: That it is caused by the pressure of the foetus on the numerous lymphatics that are located about the lower part of the superior and upper part of the inferior straits of the pelvis.

"This pressure causes obstruction in the lymphatic circulation—this obstruction induces irritation, and the irritation ultimates in inflammation, which soon involves the glands of the whole of the lower extremity, unless arrested by some agent. What are the evidences upon which I come to these conclusions? They are of two kinds, viz.: positive and negative. The positive are—

1. "That the lymphatics of the pelvic straits stand out more prominently than any other circulating vessels.

2. "They are less able to resist pressure than any other vessels. Why? Because the visatergo of the lymphatic circulation is more feeble than any other circulation in these parts.

3. "There is an effusion of lymph long before the veins become involved. How do I know this? 1st, because of the peculiar character and appearance of the swelling; 2d, because the serum drawn off by scarifying the parts is found to contain large quantities of lymph.

4. "Because we find the lymphatics much swollen, etc., before the veins become involved.

"My negative reasons are—

1. "It can not be the veins, because the phenomena of inflammation of the veins is not evidenced in this disease, until it has existed for some days, and sometimes weeks.

2. "Because inflammation of the veins elsewhere does not present the same appearance and phenomena that exist here, viz.: effusion of lymph in cellular tissue, etc.

3. "Because the treatment which is successful in combating inflammation of the veins elsewhere does not answer the same purpose in this case.

4. "Because a dissection of a portion of vein from the diseased parts, in its primary stage, does not show any trace of inflammation.

5. "If it were inflammation of the veins, resulting from pressure of the fœtus upon them, they would take on the inflammation sooner than they do here.

"There is no doubt in my mind that the veins do become involved ultimately, unless the disease is arrested in its primary stage. All of the post-mortems show the veins, as well as the lymphatics, to be involved, but the post-mortems are not reliable, so far as determining the primary cause of hardly any disease—they only show the extent of diseased action."

946. *Symptoms.*—The disease is usually ushered in with rigors of greater or less severity, and which continue for a longer or shorter time; these chills are succeeded by more or less fever, the pulse often rising to 120 or 140 beats in a minute; the bowels are mostly constipated, the tongue furred and moist, the skin dry,

and the urine scanty and high colored. There are also the other symptoms of pyrexia sometimes present, as headache, want of sleep, nausea, or vomiting, etc. Shortly after the rigors, the patient complains of deep-seated pain in the hypogastrium and loins, which is soon referred to one or other groin. In a short time, the affected limb commences swelling, and this is accompanied with more or less pain and tenderness. In a majority of cases, the swelling will be found to commence in the calf of the leg; if examined, it will feel hard and tense, and as if it was closely attached to the bone; pressure at this part will produce considerable pain. This is a valuable diagnostic symptom, as it appears before the swelling of the thigh; it soon, however, involves the entire upper portion of the limb. Dr. Denman observes, "that before the appearance of any swelling or sense of pain in the limb about to be affected, women become very irritable, with a sense of great weakness, and grievously oppressed in their spirits, without any apparently sufficient reason; complaining only of transient pains in the region of the uterus, and from these the approach of the disease has frequently been foretold. After a short time, they are seized with an extremely acute pain in the calf of the leg, extending to the inside of the heel, and then, observing the course of the lymphatics, stretching up to the ham, along the internal part of the thigh, to the groin, occasioning a slight soreness on the lower part of the abdomen."

947. The fever accompanying the disease generally assumes an intermittent or remittent form, the paroxysms occurring in the after part of the day. If the disease has commenced during the period of the lochial discharge, this will be very apt to be suppressed, or become changed and fetid in character.

948. The enlarged limb is white, pale, and shining; it may be, and is generally, warmer than natural, though sometimes its temperature is not changed, and at others it feels colder than the other limb. At the commencement and toward the termination of the swelling, the leg will be found to pit upon pressure, but when it is at its hight, it is tense, and no impression can be made upon it. The entire limb is more or less tender on pressure, though this is particularly marked along the course of the vessels.

It is stated that the femoral vein may be traced from the groin down the thigh, feeling hard, or rolling under the finger like a cord; the inguinal glands are likewise sometimes enlarged, and they have been known to suppurate.

949. *Terminations.*—Under appropriate treatment, the disease usually terminates in resolution; the febrile symptoms subsiding in a short time, and the swelling being gradually reduced, the patient regains the use of her limbs. It is a tedious affection, and it may be months after the acute symptoms have subsided before the sensations in the affected parts will become natural. Suppuration may take place in any portion of the affected part, involving more or less of the cellular tissue of the thigh, leg, or groin; the suppuration has been known in some cases to be so extensive as to cause death from the consequent exhaustion. The disease may terminate fatally, though this is not common. Dr. Burns says, "This is not generally a fatal disease; but it is tedious and often accompanied with hectic symptoms. Death, however, may be caused by suppuration or gangrene, or by exhaustion proceeding from the violence of the constitutional disease; or by exertion made by the patient, which has sometimes suddenly proved fatal; or, after the leg appears to be getting better, daily shivering, with vomiting, pain in other parts, and rapid pulse, with delirium precede death."

950. *Diagnosis.*—This disease may be distinguished by its occurring shortly after parturition, by the tense, white swelling of the limb affected, by the pain and tenderness along the course of the vessels, and by the hard, cord-like, and painful condition of the femoral vein.

951. *Treatment.*—Whilst we have special remedies for this peculiar condition of the leg, we want a good condition of the stomach and intestinal canal, and a good condition of the excretory organs. As a rule, we find an unpleasant condition of stomach, as indicated by the tongue, and this must be rectified before other remedies will act kindly. In some cases the pallid, sallow, expressionless face, with more or less nausea, and a full expressionless tongue, will call for *Nux Vomica* in small doses. The elongated and pointed tongue, with reddened tip and edges, and tenderness on pressure over the epigastrium, asks for minute doses

of Aconite and Ipecac, with an infusion of Peach-bark. The pallid tongue is the indication for a salt of Soda, and we usually give it in weak solutions as a drink, as much as the patient wishes. The deep red tongue calls for an acid, and we give this as a drink, either muriatic acid, cider or whey. The heavily coated tongue at base, bad taste in the mouth, and feelings of weight and fullness in the epigastric region, may require an emetic. The *pallid dirty* tongue asks for Sulphite of Soda. And the full tongue, full tissues, full veins, dullness and dizziness, are the indications for Podophyllin.

952. Other than these, we commence the treatment with the indicated sedative, and such special remedy as will be named hereafter. There are cases in which Veratrum is the best remedy—a vigorous circulation—pulse full and strong, and surface flushed, but in the majority Aconite will be the remedy. We use them in the ordinary dose every hour; and in the early stage of the disease it is well to apply them over the course of the saphenous veins.

953. Rhus is a prominent remedy where there is burning pain in the leg, frontal headache, and sharp stroke of the pulse. In one case with the symptoms pronounced, its action was promptly curative. Iris has its indication here in marked fullness of the thyroid glands, and in these cases exerts a very marked influence upon the affected limb. It should be thought of in chronic cases. Phytolacca is the remedy when the tongue is pallid, sore, with enlargement of lymphatic glands, tendency to engorgement and inflammation of the breasts, and mottled appearance of the affected limb. A tincture of the green root should always be employed, in the usual small dose internally, and diluted with one to three parts of water, as an application to the leg. Apocynum is decidedly the remedy when there is œdema of both feet, the affected leg pitting on pressure. The indications become stronger if there is fullness of the eyelids, or puffiness of the hands. If the bowels are constipated it may be used to the extent of giving one or two actions a day—say $\frac{3}{j}$ to water $\frac{3}{iv}$, a teaspoonful every three hours. Salicylic Acid I am confident will prove a good remedy in those cases in which there is severe pain, with lochial fetor, fetor of breath, the tongue having a leaden pallor. I should give four or five grains every two hours. Ignatia is indicated by morning chills, and coldness of the lower ex-

tremities, with pain in the lower dorsal spine. It may be associated with *Rhus*, *Bryonia*, or *Apocynum*. *Belladonna* is indicated by dullness and disposition to sleep, and by the abundant secretion of limpid urine. *Hamamelis* has its usual indications here in enfeebled veins, swollen vulva, and hemorrhoids, with relaxation of the perineum. It is given in doses of one-fourth teaspoonful every three or four hours, and the leg is bathed with it. *Apis* will be indicated by stinging pains, and burning and itching about the bladder and vulva.

954. The principal local remedies have already been named as we studied their internal administration. I do not like the use of hot fomentations or poultices, and think the simple bathing, or at least a cloth wet with the agent, the best application. In addition to those named, I suggest Permanganate of Potash (gr. xx. to water $\frac{3}{4}$ iv.) to any part showing signs of suppuration; and a solution of Salicylic Acid and Borax as a wet dressing.

CHAPTER XIV.

FUNCTIONAL DISEASES.

955. FUNCTIONAL diseases are said to be those "which are dependent on deviation from the natural or healthy action of any part of the organization, indicated by symptoms during life, which on examination after death, are found to be unconnected with any discernible change of structure. Under this head, we class *Leucorrhœa*, *Amenorrhœa*, *Dysmenorrhœa*, *Menorrhagia*, *Chlorosis* and *Hysteria*. We have already noticed the numerous structural changes of the uterus and its appendages, which are capable of producing, and do produce, each of these morbid conditions, they being but symptoms arising from the structural diseases, so that the definition given of a functional disease will not apply in a majority of instances to these conditions. Still, as each of these diseases may arise without there being any percept-

ible structural lesion, it is necessary to give them a separate consideration.

LEUCORRHEA.

956. Leucorrhea is defined by Dr. Ashwell to be: "An excessive and altered secretion of the mucus, furnished by the membranes lining the vagina and uterus, by the follicles of the interior of the cervix uteri, and by the lacunæ of the vestibulum; generally white, or nearly colorless and transparent; usually without much odor; glutinous, muco-purulent, or purulent; sometimes yellow, green, or slightly sanguinous, and of varying degrees of consistency. The amount of constitutional derangement depending on the severity of the affection and the susceptibility of the patient." This definition correctly describes the *symptom*, the vaginal discharge, but it does not give the slightest idea of the cause producing the discharge called leucorrhea. Dr. Tyler Smith, in his recent work on leucorrhea, considers that hyper-secretion of mucus is the disease, or, in other words, that the discharge is the disease, not admitting that a previous change in the structure of the parts, or an inflammatory action was essential to the production of the discharge. He also attributes structural diseases, such as erosions, ulcerations, etc., to this morbid discharge. He says: "In maintaining the important part played by the cervical secretions in inducing morbid conditions of the os uteri, I do not wish to be understood as saying that they are the only causes of these conditions. What I contend for is, that in the majority of cases in which leucorrhea is present, in combination with non-malignant disease of the os and cervix, the morbidly active condition of the cervical glands is the primary and essential disorder. Among the other causes of morbid change in the os and cervix uteri, the varying vascular and mechanical conditions of these parts in menstruation, coitus, pregnancy and parturition, must of course be enumerated. Eruptive conditions of the cutaneous covering of the os uteri, in the shape of aphæ, herpes, or eczema, form another class of causes of cervical discharge, etc."

957. The first and most important question that arises in the consideration of this morbid condition is, what causes are capable of giving rise to a hyper-secretion of mucus? In considering this

question, we must bear in mind, that the same causes that produce a hyper-secretion of mucus from other mucous membranes, will give rise to it in the mucous membrane lining the genital organs, and that the same pathological laws govern diseases of the mucous membrane wherever situated. Suppose, for instance, we take the hyper-secretion of mucus from the posterior nares and upper portion of the pharynx as the type of similar processes in other portions of the system, as it is equally frequent, and can be better observed. We find that this hyper-secretion depends upon an inflammatory action, which may have been at first acute, but soon subsides into the chronic form. This chronic inflammation gives rise to permanent dilatation of the vessels, to thickening of the mucous membrane, and to hypertrophy of the mucous follicles ; we may observe, that the mucous membrane is tumid, receiving an inordinate supply of blood, and that this tumefaction extends to the follicles, which are enlarged and prominent, and with this tumefaction we have an increased secretion of mucus. This process here and in other portions of the system is called chronic inflammation, and is amenable to the treatment used for chronic inflammatory conditions elsewhere. Why the lining membrane of the vagina, the cavity of the cervix, or of the cavity of the uterus should form an exception to this, I am at a loss to discover.

958. It has been urged against this view of the subject, that the debility of the system which so frequently exists, is proof positive that the local disease is also one of debility. This, however, is but a poor argument, for it is well known that debility of the entire system may exist, and that there may yet be a hyperæmic, congested, or inflamed condition of any single organ or part.

959. That chronic inflammation is the cause of a very large majority of cases of leucorrhœa, I have strongest reason to believe. I have never been consulted in a case of this disease but what I could readily satisfy myself of this fact. There is no doubt, however, but that there is frequently transient leucorrhœa without the presence of inflammation, but these cases being slight do not often come under the notice of the practitioner. Dr. Bennet thinks "that this term *leucorrhœa*, if retained at all, ought in sound

pathology, to be reserved for those forms of passive mucous hyper-secretion of the vaginal, cervical, and intra-cervical mucous membrane which often temporarily exist independently of inflammatory lesions, and independently of uterine ailment. These passive and fleeting conditions of hyper-secretion, really and truly are the reflex of general conditions of health, and seldom come under the eye of the profession as distinct morbid states."

960. We have already described the three principal sources of this discharge, from the vagina, the canal of the cervix, and the cavity of the cervix, under the heads of *vaginitis*, *inflammation of the cervix uteri*, and *internal metritis*, giving the character of the discharge, the pathological conditions producing it, the means of diagnosis, and the treatment, and I have only referred to it in this place to direct the reader's attention to what I consider to be the true pathological condition of the parts, when the discharge ("leucorrhea") exists.

AMENORRHEA.

960. By amenorrhea we understand the suppression of the menstrual discharge after it has once appeared, or its non-appearance at the age of puberty, or the age at which it would normally appear. The first of these, in which the menses having once appeared are suppressed, has received the name of "*suppressio mensium*," while in the second, where it has never appeared, it is called "*emansio mensium*." We will first consider *emansio mensium*, or the non-appearance of the menses.

961. *Emansio mensium, or absent menstruation.*—According to Dr. Carpenter, "in the Human female, the period of Puberty, or of commencing aptitude for procreation, is usually between the thirteenth and sixteenth years; it is generally thought to be somewhat earlier in warm climates than in cold, and in densely populated manufacturing towns than in thinly peopled agricultural districts. The mental and bodily habits have also considerable influence upon the time of its occurrence; girls brought up in the midst of luxury or sensual indulgence undergoing this change earlier than those reared in hardihood and self-denial. The changes in which puberty consists are, for the most part,

connected with the re-productive system. The external and internal organs of generation undergo a considerable increase of size; the mammary glands enlarge; and a deposition of fat takes place in the mammae and on the pubes, as well as over the whole surface of the body, giving to the person that roundness and fullness, which are so attractive to the opposite sex at the period of commencing womanhood. The first appearance of the catamenia usually occurs while these changes are in progress, and is a decided indication of the arrival of the period of puberty; but it is not unfrequently delayed much longer; and its absence is by no means to be regarded as a proof of the want of aptitude for procreation, since many women have borne large families, without having ever menstruated."

962. Without, therefore, the non-appearance of the menses has produced a derangement of the general health, we can not justly consider it a pathological state, and any and all medication should be positively avoided. Amenorrhea here may be dependent upon congenital deficiency, malformation, or upon structural disease of the genital organs; or it may depend upon a slow and partial development of the uterine organs; or upon debility; or upon the opposite condition, plethora.

963. In the first case, the ovaries may be wanting, and if this is the case, menstruation as well as conception can not occur; the general health may be good, the body well developed, and the female strong and vigorous. But there will be no development of the generative organs, the breasts will resemble those of the male, the voice will be deeper, and in all respects there will be a mixture of masculine with feminine peculiarities. In this case, the absence of menstruation will be normal. Again, the uterus may be wanting, though the ovaries are present; the female will be well developed, the breasts prominent, and all the characteristics of puberty present, with the exception of the menstrual secretion. In this case, also, the absence of menstruation can not be considered a pathological condition.

964. We have already noticed in a previous part of the work, that amenorrhea may be caused by congenital or acquired occlusion of the os or cervix uteri, of the vagina or vulva, or from the

presence of an imperforate hymen. In each of these cases, all the symptoms of menstruation may be present, and the menstrual fluid secreted, but its escape will be prevented by the mechanical impediment. The symptoms, means of diagnosis, and treatment have all been given under the separate heads, and the reader is referred to the previous description of each of these lesions for the necessary information.

965. The absence of menstruation may depend upon a slow and partial development of the uterine organs, either with or without general debility. In this case, there is nothing to be done, or that can be done, without this partial development depend upon debility, when the same measures recommended in chlorosis should be adopted; amenorrhœa, dependent upon debility of the system, will also be considered under the same head.

966. We have then only to consider amenorrhœa when it exists in connection with a full development of the body and of the sexual organs, and when this retention has caused more or less disturbance of the general health, the symptoms being those due to a vascular turgescence.

967. *Symptoms.*—According to Dr. Ashwell, the symptoms of this condition are “headache, tension and weight about the brain, with a sensation of fullness and throbbing in the center of the cranium, or about the cerebellum; a florid countenance, torpor, lassitude; pain in the back and loins; a full and generally a slow pulse, though occasionally, in irritable females, it is rapid; irregular circulation, evidenced by the feet and hands being the one hot and the other cold, or at short intervals both remarkably hot and remarkably cold; the skin sometimes harsh and dry, and at others clammy. It is not to be supposed, if the amenorrhœa continue, that these symptoms will pass away after the attempt at menstruation is over. They may do so for the first few periods, but subsequently they continue during the catamenial intervals, recurring with aggravation as the menstrual epoch again approaches. If the malady has been long neglected, or inefficiently treated, a cure will not soon be accomplished. The constitution sympathizes so entirely, that months and perhaps years may elapse before it resumes its healthy and natural actions.

968. *Causes.*—It is said that this variety of amenorrhea is most frequently met with in females who have led sedentary and indolent lives, and who have indulged in luxurious and gross diet; it is attributed by some authors to excessive uterine congestion, to torpor of the uterine vessels, or to spasm of their extremities.

969. *Treatment.*—The treatment will have to be varied according to whether it be undertaken during an interval, or at the menstrual period. If at the menstrual period, the feet should be bathed in warm water, and the warm hip-bath used, or instead of this last the patient may be directed to sit over the vapor of a decoction of bitter herbs, as tansy, hops, etc.; this should be repeated two or three times a day.

970. If there is vascular excitement, I would advise the administration of Aconite in the usual doses, with such other remedy as may be indicated. Macrotys has a wide range of application here, the pain in the pelvis, back and thighs being the indication. With tensive, bearing down pain, I should substitute Viburnum. If the face is flushed and the eyes bright, with contracted pupils, give Gelsemium. If, in place of vascular excitement, there is a feeble circulation, sallow expressionless mouth and face, and pain simulating colic, give Nux Vomica, either alternated with or combined with Macrotys. If the patient is pale, despondent and nervous, use Pulsatilla and Macrotys. In cases where there seems no special reason why the discharge should not appear, and none of the above indications, the Gossypium may be given in doses of one-fourth to one-half teaspoonful every three hours.

971. In the inter-menstrual period the remedies must be carefully selected with reference to special indications, of which I will name a few. Iron is indicated by pallor and blueness of the veins, with dull headache in the back of the head; Cuprum by the greenish sallow color, and *small* pulse; Graphites by the peculiar clear and transparent skin, with tendency to hemorrhage from other parts; the hypophosphites (lime) by pain in the chest and inclination to cough; Hamamelis by fullness and weight in the perineum.

972. In the larger number of cases, having given one of these or a restorative and bitter if needed, for the first two or three

weeks, we will give *Macrotys* and *Pulsatilla* in the usual dose, four times a day for the week before the expected period.

973. *Suppressio Mensium, Suppressed Menstruation*.—Under this head we have to consider those cases in which the menses being once established have become suddenly suppressed. This may occur at any period of menstruation, or at any age; it most frequently arises from cold taken during the menstrual period, from getting the feet wet, sitting on the damp ground, or cold applied to the vulva. Though this is the most frequent cause, yet it may arise from severe mental emotions just preceding or during the menstrual flow; from coitus during menstruation, from fever or other acute disease commencing at this period, etc. I have also noticed in several cases that suppression of the menses of a very intractable character has occurred from a long sea voyage; in the cases that I have noticed, menstruation was checked either at the first period after going on board ship, or else that after this period had passed, there were no more symptoms of their appearance during the voyage, the constitutional suffering commencing in one, two, or three months after landing.

974. *Symptoms*.—The amount of disturbance consequent upon suppression of the menses varies very much in different cases in some cases, there is a slight headache, a feeling of weight in the pelvis, pain in the back, and in the limbs, etc, but so slight as to give the patient but little uneasiness; but more frequently there is a slight chill, followed by more or less fever, with headache, hot skin, quick pulse, thirst, nausea, etc. Sometimes the suppression is followed by inflammation of the uterus, either general, or of the cervix only; in these cases, the symptoms present will be more severe. Dr. Churchill states that the most puzzling sequæ of suppression is, “a species of hysteria, simulating inflammation, but without the usual accordance of symptoms, (some one or other of the important being absent,) and changing from one organ to another as soon as our remedies are brought to bear upon it. I have seen the head, lungs, and stomach successively thus affected, and suddenly and apparently spontaneously relieved. The patient is very liable to attacks of fainting and hysterical paroxysms.” Capuron mentions that attacks of ap-

plexy and paralysis sometimes result from sudden suppression of the menses. Other authors state that aphonia, derangements of vision, amaurosis, and cutaneous disorders follow from the same cause.

975. These symptoms are very much mitigated in some cases by the occurrence of *vicarious menstruation*, or the establishment of a supplementary hemorrhage from some other portion of the body. The mucous membrane of the nose, of the lungs, stomach, and bowels, are the most common seat of this discharge, though it has been known to occur from the axilla, from the ears, the mammae, the mouth and gums, fingers and toes, from ulcers, in fact from nearly every portion of the body. This hemorrhage generally consists of blood only, and unless very great in quantity, lasts for several days, and it may reappear at each menstrual period until the menses are reestablished. Though this hemorrhage might at times seem alarming, as when from the lungs to indicate tuberculosis, yet when the suppression of menstruation is taken into consideration, it has not that importance which it would otherwise have. This vicarious hemorrhage is probably an effort of nature to establish a supplementary issue for the menstrual secretion, which has been suppressed.

976. Again, there are other cases where the suppression of the menses does not assume the acute form spoken of, the discharge, instead of being at once checked, continuing for several menstrual periods, though each time it becomes less in quantity and lighter in color, being preceded and succeeded by a leucorrhæal discharge, until at length it does not present the slightest trace of color. This supplementary leucorrhæal discharge occurring at each menstrual period might be classed with vicarious menstruation.

977. *Diagnosis*.—There is no difficulty in determining that the discharge has ceased, but the important point that we have to decide is, whether the cessation is, or is not, due to pregnancy. In married women the suppression will nearly always be attributed to pregnancy, but in some cases, both in the married and unmarried, the female will consult the physician for suppression of the menses, hoping that the remedies used will produce abortion. In such cases, therefore, we should be very cautious in giving emenagogues, unless we can satisfy ourselves that pregnancy does not

exist, or if we can not do this, to use palliative measures until such time as it may be ascertained.

978. *Treatment.*—The first point to be attended to in this form of amenorrhea, is to remove any inflammatory condition of the uterus, if this should exist, in the manner heretofore described. If the patient is seen soon after the discharge is suppressed, we should employ such measures as will tend to recall the discharge. For this purpose her feet should be bathed in warm water, the warm hip-bath should be used, or she might sit over the vapor of a decoction of bitter herbs, and some warm diaphoretic infusion should be given, as an infusion of *Eupatorium Perfoliatum* or *Pennyroyal*. These may be called “domestic means,” and though frequently successful in cases of suppression from cold, and usually harmless, yet sometimes they may do serious injury by causing an increased circulation to the pelvic viscera, and increased congestion. In place of these, the modern treatment with small doses of direct remedies, will give better results. If there is an excited circulation, give—R Tinct. Aconite, gtt. viij.; Tinct. Macrotys, gtt. xx.; Water, $\frac{3}{4}$ iv.; a teaspoonful every two hours. If the circulation is not excited, the patient despondent or nervous, use—R Tinct. Pulsatilla, Tinct. Macrotys, aa. $\frac{3}{4}$ ss.; Water, $\frac{3}{4}$ iv.; a teaspoonful every three hours. If associated with nausea, abdominal pain (uterine colic), give—R Tinct. Nux, gtt. v.; Tinct. Macrotys, gtt. xx.; Water, $\frac{3}{4}$ iv.; a teaspoonful every hour. If there is tensive, bearing down pain, substitute *Viburnum* for Macrotys in either of these prescriptions.

979. In some cases we may see that it is best to give a remedy that will exert a more marked influence in “forcing” a discharge. But the case must be carefully diagnosed. There should be freedom from local disease of the reproductive organs, and an assurance that pregnancy does not exist. In such cases, half teaspoonful doses of a tincture of the *Gossypium* (made from the green root before the bolls have matured) may be given every two hours until the flow appears. If there is excitement of the circulation, Aconite and Macrotys may be given as above, or if there is uterine colic the *Nux* may be used. There is but one case in which I should use Ergot—when the patient was dull, drowsy, and showed evidence of want of spinal innervation.

Here the tincture may be used in doses of ten or fifteen drops every three hours.

980. When the patient has passed one period, we use any means that may be indicated during the first weeks of the intermenstrual period, and give some remedy to favor the discharge for the week before it is expected. I have been in the habit of prescribing *Pulsatilla* and *Macrotyls* for this purpose, and they meet the indications in a large number of cases. But in some the *Gossypium* in small doses, or other remedies, may be given.

981. In chronic suppression, or where the disease has existed for some time, and where it is accompanied with a debilitated state of the system, other measures will have to be employed. The general health should be restored by the administration of tonics and the preparations of iron, by the use of the bath, and appropriate exercise. Any inflammation of the uterus, especially of its *cervix*, must be removed by appropriate treatment. The frequency of inflammatory disease of the *cervix uteri* in chronic suppression of the menses, should always cause a rigid examination of the symptoms present, and if these should justify it, of the uterine organs, both by the touch and sight.

982. Do not imagine that Iron is the only restorative in these cases. It is a valuable remedy when indicated; but worse than worthless when not indicated. The evidences of anemia may be sufficient, but blueness of veins, of lips and tongue, and dull pain in the posterior part of the head will be better. In some cases a tonic like the triple phosphate of *Quinia*, *Strychnia* and Iron, may be used with advantage. The compound syrup of the *Hypophosphites* is a good restorative, as is cod-oil, when there is tendency to scrofulous inflammation of cellular tissue. Iodine or *Nux*, as in the compound Iodine pill, will serve a good purpose in stimulating the reproductive function. *Phytolacea* alone, or with *Dondovan's Solution*, will be the remedy when there is glandular disease with cutaneous eruption, or hard, painful engorgement of cellular tissue. *Phytolacea* and *Apocynum* are used when there is *œdema* of the extremities, and the engorgements above named. *Cuprum* is indicated by the greenish pallid coloration of skin and tongue; *Arsenic* by the feeble pulse, expressionless tongue, and inelastic skin, (minute doses); and *Graphites* by the blanched transparent skin, and inclination to menstrual molimen at frequent intervals,

983. That the reader may be familiar with the emmenagogue remedies in ordinary use, I may here enumerate as such the savin, black hellebore, aloes, gamboge, etc., which prove emmenagogue by their drastic cathartic effect upon the bowels, acting especially upon the large intestine, causing an irritation and determination of blood to the pelvis, and thus indirectly proving emmenagogue; again, the black cohosh, blue cohosh, and their active principles, macrotin, and caulophyllin, guiacum, madder rue, borax, etc., have been termed emmenagogues, though the *modus operandi* of their action is not known. Electricity, magnetism and galvanism act as direct stimulants to the uterine organs and the nerves that supply them, and they have therefore proved efficient emmenagogues. Of the emmenagogue combinations that I have seen used with good effect, I may mention first, a favorite prescription of my own in the olden time:

R Caulophyllin, 3j.
Ext. Aconiti, gr. iij.
Aloes,
Ferri-Sulphas, aa. gr. xxxx.

M. Ft. Pillula, No. xxxx. The dose of these pills are two morning, noon and night. They have thus far proved very efficient in my practice, under the circumstances named. If the female be troubled with piles, however, the aloes should be omitted, and one-eighth of the quantity of podophyllin substituted for it. The alkaline tincture of guiacum, formula of Dr. Dewees, will also be found to be a valuable remedy, principally in those cases where the suppression is accompanied with pain in the lower extremities and back, and a sensation of weight and fullness in the pelvis; it is composed of

“ **R** Pulv. g. Guiaci. opt. 3 iv.
Carb. sod. vel. Potass., 3 iss.
Pulv. Pimento, 3 j.
Alcohol dil., lb j.

Digest for a few days.” The dose of this tincture is one

drachm three or four times a day. Another combination which is used extensively, is :

B Aloes,
Myrrh,
Sulphate of Iron, $\text{aa. } 3\text{ j.}$
Oil of Savin, f. 3 j.

Make thirty pills; one of them may be given three, four, five, or six times a day. This list might be increased almost indefinitely, but these emmenagogue formulas must be empirical, as the disease occurs under so many different circumstances and presents such varying characters. The only rational mode of practice is, to correct any dyscrasia to which the patient is subject, especially any disease of the uterine organs, restore the general health, and nature, in a large majority of cases, will re-produce the physiological menstrual secretion.

DYSMENORRHEA.

984. By dysmenorrhea, we understand a painful and difficult flow of the menses, they being generally, though not invariably, scanty in quantity, in severe cases containing clots, fibrous shreds, or even an entire false membrane. In many women, the menstrual flow is always accompanied and preceded by pains in the back, limbs, and in the hypogastric region; these pains, however, are but slight and of short duration, and do not produce much uneasiness, and are not to be considered as dysmenorrhea; but when these symptoms are aggravated, so as to produce extreme suffering, this disease is said to exist. We have to notice three varieties of this affection: *Neuralgic Dysmenorrhea*, *Inflammatory Dysmenorrhea* and *Mechanical Dysmenorrhea*.

985. *Neuralgic Dysmenorrhea*.—This form of dysmenorrhea may attack females of any age, though it is said to occur more frequently after the age of thirty than earlier in life, and in unmarried females than in the married, or in married women who have had no children. It is also more frequently observed in those of a delicate and nervous habit of body, but it may arise in those of an opposite condition.

986. *Symptoms.*—Sometimes the menstrual period is preceded for a few days by a disordered condition of the general health; the bowels are constipated, the appetite impaired, there is great languor, irritability, etc. Most generally, however, the first symptoms appear but a few hours before, or at the commencement of the menstrual flow. The patient then complains of a sharp, darting, lancinating pain in the region of the uterus, and which radiates from this point to the ovarian regions, to the back, down the thighs, etc.; sometimes the pain in the lumbo-sacral region, in the groins and thighs is excessive, far worse than the uterine pain. Again, there may be severe pain in the mammae, which may precede the appearance of the menses for two, three, or four days; or it may occur at the commencement of the discharge. Sometimes during the flow of the discharge, there may be severe expulsive pains resembling those of labor, and which greatly aggravate the suffering. There is rarely any febrile excitement present, though the pulse is sometimes quickened, and in a majority of cases, the skin will be found harsh and dry. The character and quantity of the discharge varies much in different cases; sometimes for the first few hours, or for a day or two; it is passed in drops, but it then becomes free, and with the free discharge there is an entire or partial cessation of pain; at others, it may occur in slight gushes, each discharge being accompanied with severe pains, or small clots or fibrinous shreds may be discharged at this time; in others, again it may appear for a day or two, and then cease to again reappear, or it may continue throughout the menstrual period in usual quantity. As soon as the menstrual period is past, the pain ceases, and the patient regains her usual health. This species of dysmenorrhea may exist for only one menstrual period, or it may be habitual, or it may occur or be greatly aggravated at one period, and then for the next, or for two or three periods, it may be absent or very mild, but will again recur upon the least over-excitement or exposure.

987. *Causes.*—Cold is considered to be the most frequent cause, especially when taken during menstruation, soon after delivery, or after abortion. It is also said to arise from violent

mental emotions, sudden shocks, etc., when occurring at the menstrual period.

988. *Treatment.*—We have made important additions to our remedies for the relief and cure of this unpleasant disease in the past twenty years, and a very large proportion of cases may now be cured by the use of internal remedies alone. Even many of those which were diagnosed as “mechanical dysmenorrhœa” have been relieved, even after a failure by dilatation or incision of the cervix. The remedies to be specially studied in this connection are the Pulsatilla, Macrotys, Viburnum, and Nux, though there are others that exert a very marked influence over the dysmenorrhea when specially indicated. If there is vascular excitement at the commencement of the flow, I combine Aconite with the Macrotys or Viburnum. Taking the ordinary case, I prescribe—R Tinct. Pulsatilla, Tinct. Macrotys, aa. 5ss.; Water, 3iv.; a teaspoonful four times a day, commencing four to six days before the menstrual period, and continuing until it is fully established without pain. In chronic cases we repeat it every month in this way until the desired object—painless menstruation—is established, even though it takes months to accomplish it. The special indication for Pulsatilla in this case is nervousness, usually depression. Viburnum should be chosen when the pains are tensive and explosive, as if there was something to be passed. It may be given with Aconite or Macrotys, rarely with either of the others. Nux is the remedy for “uterine colic,” and we have a species of dysmenorrhea in which the pain simulates a colic, the patient being greatly prostrated, with a feeble circulation, pallid, sallow face, and sometimes nausea. The remedy may be combined with Macrotys, or Caulophyllum, or Dioscorea.

989. While the remedies named are those indicated in the majority of cases, we will find some in which Gelsemium, Belladonna, Rhus, Apis, Ignatia, Collinsonia, and Lobelia, are remedies. Scanty and difficult urination, with flushed face and bright eyes, will call for the first; profuse discharges of urine, dullness and drowsiness, the second; burning pain and frontal headache, the third; burning, with intense itching, the fourth; severe chill and coldness of the extremities, the fifth; tensive, tearing pain about the rectum, as if some rough or pointed substance had lodged there, the sixth; great praecordial oppression, difficult

respiration, and full rigid pelvic tissues, the seventh. This is a very brief description of the remedies used, but every word has a meaning, and it will be very difficult to mistake it.

990. The use of carbonic acid as a local anæsthetic to the vagina and uterus, has been strongly recommended by Dr. Simpson and others, in this affection, it is said not only to give temporary relief, but that a permanent cure may be effected by it. Dr. Simpson uses a common wine-bottle for the formation of the carbonic acid gas, and forms it by mixing in the bottle six drachms of crystallized tartaric acid, with a solution of eight drachms of bi-carbonate of soda, in six or seven ounces of water. A long flexible caoutchouc tube conducts the gas from the bottle into the vagina. The cork fixing this tube into the mouth of the bottle, should be adapted so as to prevent the escape of gas by its sides. With this view, the cork should be perforated by a metallic tube, and covered externally with a layer of caoutchouc. Dr. Dewees used the same kind of an apparatus, but formed the gas by mixing dilute sulphuric acid and carbonate of lime; he recommended it strongly as a palliative in carcinoma uteri.

991. In regard to the benefit to be derived from its use, Dr. Simpson says: "I have used carbonic acid as a local anæsthetic, principally in neuralgia of the vagina and uterus, in dysmenorrhea, and in morbid states of the pelvic organs, accompanied with pain, as in carcinoma, etc. I have found it also sometimes of use in irritable states of the neighboring organs. Two years ago, I had under my care, from Canada, the wife of a medical gentleman, who was suffering from that most distressing disease—dysuria and irritability of the bladder. Many modes of treatment had been tried in vain. The injection of carbonic acid gas into the vaginal canal several times a day at once produced relief, and ultimately effected a perfect cure. She has remained well since her return to America, and lately became a mother. Occasionally relief follows immediately. In two or three instances I have seen the use of the gas continued daily for months. I have the notes of one case where the patient was invalidated and almost entirely kept the supine posture for years, from feeling of pain and bearing down in the uterus and neighboring parts, particularly on attempt-

ing to sit or walk. Many modes of treatment were tried by myself and others, with little or no benefit. She has, however, at last regained in a great measure the power of progression, and freedom from suffering in the erect posture, a result which she herself ascribes to the local application of carbonic acid gas, which I recommended to her some months ago; and in the use of it she has regularly persevered. Dr. Major states that in dysmenorrhea he has employed the injection of carbonic acid gas into the vagina in a great number of instances, and generally with decided advantage, the pain being almost always relieved by this treatment. He directs the remedy to be used two or three times a day, and for five or six minutes each time."

992. *Inflammatory Dysmenorrhea*.—This form of dysmenorrhea presents nearly the same symptoms as the neuralgic form during the menstrual period; but instead of the patient being free from pain during the menstrual interval, she has all the symptoms of the inflammatory affection continuing. This form of the disease likewise affects the general health more than the preceding. Dr. Bennet thinks that we may connect with inflammatory dysmenorrhea that form which has been described under the head of pseudo-membranous, and which is characterized by the expulsion of shreds and casts of plastic lymph from the cavity of the uterus. "I believe that the formation of these membranes coincides almost invariably with the present or past existence of uterine inflammation. In other words, I have found, in the great majority of cases of this description that have come under my observation, that there has been at first inflammatory disease, although the removal of this disease has not always freed the patient from the liability to the formation of the pseudo-membranous casts. It would appear as if habit alone sufficed in some instances to perpetuate their formation, or at least their occasional occurrence, even after the removal of inflammation, if they have once occurred under its influence." The production of these dysmenorrheal membranes always aggravates the uterine suffering, their expulsion being accompanied by severe tortina like the pains of labor.

993. *Diagnosis*.—This form of dysmenorrhea may generally be distinguished from the other two, by development of pain as a

permanent menstrual condition in a person otherwise menstruating without pain. In this form likewise the symptoms of inflammation will generally be present through the menstrual interval. If these symptoms be present, or if the disease resists the usual remedies for the affection, an examination should be made to determine the condition of the uterine organs, when the inflammation will be detected.

994. *Treatment.*—The treatment during the menstrual flow will be the same as for neuralgic dysmenorrhea, our object being to mitigate the pain and promote the menstrual discharge. But during the menstrual interval our efforts should be directed to the removal of the inflammation; this being the cause of the painful menstruation, its removal will be followed by a cure of the dysmenorrhea, which is but a symptom.

995. *Mechanical Dysmenorrhea.*—The term mechanical dysmenorrhea is applied to that form which is supposed to arise from stricture of the canal of the cervix. The attention of the profession was first called to this cause by Dr. Mackintosh of Edinburgh. He states that he has found it a very frequent cause of the affection, though this is denied by other authors. There can be no doubt that stricture of the cervix, either congenital or acquired, does sometimes exist, but from the contradictory statement of authors it is impossible to determine its frequency; when it does exist, however, it may be a cause of dysmenorrhea. The symptoms of this form of dysmenorrhea do not differ materially from those of the other forms. The peculiar character of the dysmenorrhea, when caused by congenital contraction, according to Dr. Bennet, is the absence of *any* uterine symptom during the interval of menstruation, and intense agonizing pain for a few hours before the flow of blood appears, either then disappearing, or lasting throughout the period; these pains commencing with menstruation in early youth. The obstruction may merely be at the os internum, spasmically contracted; in which case, as soon as it has been overcome, the blood escapes freely, and pain disappears. But, if the os internum is permanently contracted, or the contraction exists in the cervical canal, the pain may continue throughout the catamenial period.

996. *Treatment.*—Where it is ascertained that the dysmenorrhea is dependent upon contraction of the cervical canal, it may be relieved by its cautious dilatation. This dilatation may be effected by the use of graduated elastic or metallic bougies, commencing with one of a small size, and gradually increasing it until the canal is sufficiently dilated. In using these bougies the patient should be placed in the usual position for making an examination, the index-finger of one hand being introduced to the cervix uteri, the bougie may be guided by it to the os, and by a slight rotatory motion it should be carefully introduced through the cervix to the fundus. The frequency with which the bougie is introduced, must depend altogether upon the degree of irritation it produces; if any should arise, every two or three days will be sufficient. Incision of the cervix uteri has been recommended and many instruments have been devised for the purpose. The one in most common use is made like a pair of scissors, the cutting blades shutting into a staff like a uterine sound. The instrument being introduced as far as the operator deems it necessary, the blades are spread and allowed to cut their way out as the instrument is withdrawn. I think its use objectionable.

997. Each of the three varieties of dysmenorrhea generally causes sterility; this is almost invariably the case in the severe forms, but in the slighter impregnation may occur. If conception does occur, it may be followed by an entire disappearance of the dysmenorrhea afterward.

MENORRHAGIA.

998. Menorrhagia, or profuse menstruation, may occur at any age, and either in the plethoric and robust, or in those of a delicate and exhausted habit of body. The term menorrhagia signifies merely an increase in the catamenia, the standard with which it is compared being the normal quantity discharged by the female, and not any definite amount supposed to be the average quantity of blood discharged during menstruation. Thus, in some females the discharge is always very profuse, and yet still compatible with health, while this same amount of discharge would be considered as menorrhagia in others. Excessive menstruation may occur in two ways; either as it regards the frequency of its

return, or the quantity lost at each period: in the first, the excessive menstrual discharge, either as to frequency or quantity, is the normal uterine secretion, showing no tendency to coagulate either within the uterus or when discharged; in the second, the discharge is actually a hemorrhage, resulting, probably, from an exhalation from the uterine vessels, the discharge coagulating both within the uterus, forming clots, and after it has passed from the genital organs. These two varieties we will consider separately.

999. *Menorrhagia, with the discharge of the normal menstrual fluid.*—As I have already stated, we have no standard by which we can determine the existence of this species of menorrhagia; the fluid being normal in quality, its variation in the frequency of its recurrence, or in the quantity discharged, will have to be determined by the previous history of the patient. Thus, if the periods of recurrence were twenty-eight days, the appearance of the menses at intervals of two or three weeks would be called menorrhagia; or, if the normal quantity discharged was six or eight ounces, the loss of fifteen or twenty ounces would be profuse menstruation, and still each of these circumstances, occurring in other females, would be normal.

1000. *Symptoms.*—The symptoms attending profuse menstruation are such as we should anticipate from any exhausting discharge; thus, there is debility, languor, inactivity, the face is pale, the hands and feet cold, etc. There is generally a sensation of weakness or slight pain in the back, and, as the disease continues, a constant aching, more or less severe, in the lumbar regions, in the hips and thighs, and in the hypogastrium. "If," says Dr. Churchill, "the disease be not relieved, and especially if uterine leucorrhea be present, all these symptoms become aggravated. The exhaustion and languor increases, the face becomes sallow, an aching pain is felt across the loins, extending around the lower part of the abdomen; pain in the left side, repeated and severe headaches, derangement of the stomach and bowels; in short, all the secondary symptoms, and the derangement of the health which follow in the train of anemia, no matter in what way this may have been produced. In some extreme, but rare cases,

we have diarrhea and anasarca, with nervous symptoms, melancholy, and even epilepsy resulting from this disorder."

1001. *Causes.*—As already stated, menorrhagia of this, as well as the other variety, may occur both in the debilitated and the plethoric, though much more rarely in the latter. It may be caused by cold, by too great physical exertion, or mental excitement, and, it is said, from immoderate sexual indulgence. A very frequent cause of menorrhagia is undue lactation; it also arises from hemorrhage after parturition or abortion.

1002. *Treatment.*—The treatment of profuse menstruation will vary according to whether the patient is plethoric or debilitated, but in either case the first indication is to remove the exciting cause.

1003. In the plethoric, if the discharge is not too profuse, and it can not well be if the discharge still retains the menstrual character and the patient is not debilitated, but little treatment is necessary during the menstrual period. If the discharge is excessive, the patient should keep the recumbent posture, the room kept cool, and the diet plain and unstimulating, and all kinds of excitement avoided. If the bowels are constipated, they may be evacuated by the administration of the Carbonate, Sulphate, or Citrate of Magnesia, or by the use of laxative enemas. If we should wish to check the discharge, cold water or vinegar may be applied to the abdomen and vulva, with the internal administration of the tinctures or the oils of Erigeron and Cinnamon, or small doses of ipecac.

1004. During the menstrual interval the diet should be plain and unstimulating; daily exercise in the open air should be taken; the bowels kept regular, and the cutaneous secretions free by the daily use of the bath.

1005. In the debilitated it is important that this exhausting discharge should be checked as soon as possible. In passive uterine hemorrhage I have placed more dependence upon Carbo-veg., 2d decimal trituration, than any other remedy, though of course it is not adapted to all cases. I give it in grain doses, every one to four hours, and usually follow it with the tincture of Cuprum as a blood maker. When the eyelids look full, or slight

swelling of the feet, *Apocynum* is the remedy, gtt. x. being added to half a glass of water, and given in doses of a teaspoonful every hour. *Ergot* may be employed in some cases, but I would restrict it to those in which the uterine globe had been enlarged from some cause, or in which there was marked evidence of want of spinal innervation. *Gallic Acid* is one of the older remedies, and may be used in doses of three to five grains every two hours. The oil of *Erigeron*, in doses of five drops, or tincture of *Cinnamon* in 3ss. doses as often as necessary, is also recommended. The *Erigeron* or *Cinnamon* may be combined in the form of tincture, if the physician prefers it. If nothing better is at hand, small portions of grated nutmeg with alum will serve the purpose.

1006. During the menstrual interval, such measures will have to be employed as will restore the general health; and by this means prevent the excessive discharge at the next menstrual period. In addition to the means employed for this purpose, the patient should make daily use of vaginal injections of cold water, and, in addition to the daily sponge-bath, the entire pelvis, loins, and hypogastrium may be bathed daily with salt water, and accompanied with brisk frictions with the hand; this will be found to be an important means of restoring tone and vigor to the pelvic organs. For the week preceding the next menstrual period the patient may use with advantage the trituration of *Carbo-veg.* in grain doses four times a day.

1007. *Menorrhagia, with the discharge of blood directly from the uterine vessels, the discharge being coagulable.*—This variety of menorrhagia is of very rare occurrence, without there exists some structural disease of the uterus, which may be detected by an examination. This form of menorrhagia may occur either in the robust or plethoric, the hemorrhage being acute, or in those of a debilitated or feeble constitution, the hemorrhage being passive.

1008. *Symptoms.*—In active menorrhagia, says Dr. Ashwell, "there generally exists immediately before the expected period, and occasionally for a few days prior to the flow, considerable tension and fulness within the pelvis, accompanied by a feeling of weight and throbbing in the uterus. The mammae often sympathize, becoming tumid, hot, and tender on pressure, and the external genitals are sometimes slightly swollen and painful. The

pulse is quickened, there is oppression of the head, and often decided headache, with sympathetic fever. In this way the acute or active form of menorrhagia is ushered in, and is throughout characterized by a predominance of inflammatory or spasmodic symptoms, or by a combination of both. When inflammation is present, there will be fixed pain in the uterine regions; a hot, dry skin, and a frequent, hard and full pulse. Where spasm prevails, the pain will not be constant; but, having continued a longer or shorter time, and often most severely, it will subside, and after an interval again occur with throes resembling the pains of labor. The discharge, too, is equally variable, ceasing for short periods, during the pain, and returning when it subsides. The pulse, during the spasm, is contracted, irritable, and quick; afterward it becomes softer and slower, giving proof by this rapid change of a state of the system, neither of inflammation nor debility, but of irritation. The progress, duration, and severity of these attacks are extremely variable. Sometimes the discharge comes on and continues by gushes, and numerous coagula are expelled. The patient, in many instances, is thus relieved, the headache, tension, and pain in the uterine region are quickly diminished; the pulse is softer and less quick; the skin cooler and moist; and the remainder of the period is passed over with tolerable comfort. In the more protracted and aggravated cases, the discharge often continues from three to six days, not without diminution, but still with such proneness to return, that the patient is compelled to avoid exertion, and to maintain almost constantly the recumbent position. On the subsidence of the flow, she is weak and exhausted, and several days elapse before she regains her usual freshness of countenance and strength of pulse. It is easy to mark the transition from this to the passive form of menorrhagia; for, although at first, the recurrence of the events just now described, may not seriously impair the health, yet, after a time, the loss produces a marked impression on the system; the flow lasting longer, and the number of days between the catamenial periods being so diminished that scarcely one attack is over before another approaches. Thus, the active and acute variety is merged in the passive form of the disease."

1009. The *passive* form of menorrhagia is by far the most frequent; it varies in degree from a slight excess over the normal discharge to a profuse and rapidly debilitating hemorrhage. Menstruation may occur at the regular intervals, or these may be shortened, the menses appearing at intervals of two or three weeks; the length of the menstrual flow may also be greatly increased. The symptoms are those of exhaustion and debility; the pulse is feeble, and occasionally quickened, the extremities cold, the face colorless, want of appetite, pain and weakness of the back, indisposition to exercise, etc. This variety is said to be almost always accompanied with leucorrhea.

1010. Another species of menorrhagia that we might notice here, occurs at the commencement and close of menstruation, and generally results merely from uterine congestion. In the young female the first periods of menstruation may be accompanied by more or less menorrhagia, but after this the menstrual function will be physiologically performed, still the loss of blood at these times is very rarely such as to call for medical interference. It is not so, however, at the close of menstruation, the occurrence of menorrhagia at this time being both frequent and profuse. It may arise merely from uterine congestion, and in many cases this is probably the cause; thus the menses may disappear for two or three periods, and, when it does appear again, there is such a determination to the uterine organs that menorrhagia is the result. It may likewise occur at this period from the presence of malignant growths, and tumors, but apart from these, I believe, it is most frequently caused by inflammation either of the entire uterus, or more frequently of the cervix. On this point Dr. Bennet says:—"In nearly all the instances of very obstinate hemorrhage at the change of life which I meet with, I find on examination that the congestion and hemorrhage are kept up by inflammation and ulcerative disease. Indeed, some of the very worst instances of protracted and severe hemorrhage that I have ever seen, have been cases of this description; and, what satisfactorily proves that the inflammatory affection is the cause of the continued hemorrhage, is, that when it is cured the hemorrhage generally ceases. This is not, however, invariably the case. I

have occasionally met with females at the critical period of life, in whom the hemorrhage obstinately persisted after the removal of the inflammatory and ulcerative disease of the cervix, which had probably in the first instance given rise to it. In several of these cases, however, time or dilatation of the cervix has subsequently proved that the hemorrhage did not proceed from a sound uterus, but was connected with the presence of a polypus, or of a fibrous tumor, so small and obscurely situated as not to have been recognized at first."

1011. *Causes.*—The causes of these varieties of menorrhagia are the same as those named in profuse menstruation.

1012. *Diagnosis.*—The fact that uterine hemorrhage exists can always be ascertained from the patient, but, whether it does or does not arise from structural disease of the uterus, can only be known by a strict vaginal examination. This should always be made if the hemorrhage does not yield to the use of the ordinary remedies, the various morbid conditions, capable of giving rise to uterine hemorrhage, have been already described, and the reader is referred to them for their distinctive marks.

1013. *Treatment.*—In active hemorrhage I like the action of Veratrum, associated with Ipecac, and followed by oil of Erigeron if necessary. I usually prescribe—R Tinct. Veratrum, gtt. x. to gtt. xx.; Tinct. Ipecac, gtt. xv.; Water, $\frac{3}{4}$ iv., a teaspoonful every fifteen minutes at first, increasing the distance between the doses when the patient feels nausea. This will sometimes be all that is necessary, with rest in the recumbent position, to stop the most alarming hemorrhage. If not, follow in a short time with five-drop doses of oil of Erigeron on sugar, or five-grain doses of Gallic Acid. In place of Veratrum the Lycopus may be given in the proportion of gtt. xxx. to water $\frac{3}{4}$ iv. Macrotyls may be added to the treatment when there is muscular pain and uterine tenderness, and Viburnum when the pain is expulsive like labor pains. Apocynum should be thought of when there is the slightest appearance of œdema, and Ergot if there is impairment of spinal innervation. The Hamamelis will also prove a valuable remedy, and should be thought of in anticipating the next menstrual period. It may be given in teaspoonful doses during the flow, and

afterwards in doses of one-fourth teaspoonful four times a day. The *Senecio* and *Aletris* have proven useful during the inter-menstrual period, and even to correct the hemorrhage. If the hemorrhage has been ushered in with a chill, it is well to follow the sedative with five-grain doses of *Quinine*, and singular as it may seem, the first dose will sometimes arrest the hemorrhage when other means have failed. The triple phosphate of *Quinia*, *Strychnia* and *Iron*, in the usual tonic doses, is an excellent remedy during the inter-menstrual period. Should the hemorrhage be alarming, cold may be applied to the abdomen and vulva, and the vagina plugged with sponge or linen cloths. During the menstrual interval the same course of treatment should be pursued as recommended for profuse menstruation in the plethoric; and should there be any inflammation of the uterus or its cervix, which may be the cause of this form, it should be ascertained and removed.

1014. In passive hemorrhage we may give the *Carbo-veg.*, oil of *Erigeron*, *Gallic Acid*, tincture of oil of *Cinnamon*, *Apocynum*, minute doses of *Ipecac* or *Ergot*, as heretofore recommended. I like the action of the first named, and when the patient was pallid and almost bloodless, I would rather trust it than any other. The *Hamamelis* is especially the remedy when there is a sense of fullness with relaxation in the pelvis and perineum. The patient should be kept in the horizontal position, on a hard bed or mattress, the extremities kept warm by the use of hot bricks or bottles of hot water, but otherwise she should be kept cool. If the above measures are not sufficient to arrest the discharge, *Ergot* may be administered in doses of five grains and repeated every one or two hours, or the tampon may be used, or the extremities may be ligated: this last measure will nearly always prove effectual in checking the discharge until other means have had sufficient time to act.

1015. During the menstrual interval the means already mentioned should be resorted to, to improve the general health, all causes tending to produce the disease should be avoided, especially such as tend to produce excitement of the genital organs. The directions of Dr. *Ashwell* in this disease, are to the point. He

says: "Sexual intercourse and stimulants, mental excitement and physical effort, must be avoided for ten or twelve days before the periodical returns. When there are increasing pallor, œdema, threatened dropsies, softening of the cervix, and aggravated debility—sea air, or mild but nutritious diet, consisting of animal food and milk, or malt liquor, must be enjoined. Where there is universal coldness of surface, especially of the extremities, frictions, by stimulating embrocations, the flesh-brush, and horse-hair gloves, the wearing of flannel and worsted stockings, are indicated. The salt hip-bath, the local salt shower-bath, applied night and morning, by a common garden watering-pot, over the hypogastric and lumbar regions, are often advantageous. Nor is the injection of cold water, once or twice a day, into the rectum, to be neglected. Astringent vaginal injections are deservedly relied on, especially if carefully administered as already urged, during the intervals. Still, there are cases where cold injections can not be borne. Local fullness, excitement, and pain follow their use; and sometimes I have attributed to their employment, an earlier and larger return of the hemorrhage. They are most beneficial where there is copious leucorrhea, and from the cure of this morbid secretion, good may generally be anticipated. It must be remembered, that the unmarried are liable to congestive menorrhagia, and I have often thought that their cure was more difficult and protracted, and their hemorrhages larger, than where many children had been borne; but on this point, I am not prepared to give a positive opinion."

CHLOROSIS.

1016. Chlorosis, or green-sickness, is defined by Dr. Ashwell, to be: "A peculiar affection of the general health; in which debility, languor, and deranged stomachic functions are prominent symptoms; most frequently occurring when puberty is or ought to be established, although it may exist at any subsequent period, always characterized by anaemia of the system, and a yellowish, dirty-green pallor of the surface. When a disease of early youth, almost invariably connected, either with entire absence of menstruation, or with a scanty, painful, and irregular performance

of the function ; and if a disease of later life, in addition to these causes, it may have been preceded and produced by menorrhagia or leucorrhea." This disease is strictly a disease of the blood, and may arise in either male or female ; it very rarely occurs in males, however, and when developed in the female, it is nearly always associated with some derangement of the menstrual function, hence it is considered by most authors to be a disease either dependent on derangement of the menstrual functions, or else that the blood-disease is primary, and the menstrual derangement the effect of it. In a large majority of cases, it occurs at or near the period of puberty, and it has thus been considered a disease peculiar to this period.

1017. *Pathology.*—As it is an admitted fact, that chlorosis is a disease of the blood-mass, we have to ascertain in what this consists—what change the blood undergoes to produce this condition of the system, and then what influence the uterine organs have in producing this change. According to Becquerel and Rodier the blood of a healthy female consists of water 791.1 parts in 1000, solid constituents 208.9 parts in 1000. This 208.9 parts of solid constituents consists of: fibrine 2.2, corpuscles 127.2, albumen 70.5, fat 1.6, extractive and salts of serum 7.4. In chlorosis, all the constituents of the blood retain their normal proportion, with the exception of the red globules, which are diminished from their normal amount 127.2 to 70.50, or even as low as 27. With this diminution in the red globules, we may have a diminution in the entire quantity of the blood—there is not only poor blood (*spanemia*), but also deficiency of the blood (*anæmia*). Andral states : "That the quantity of blood in circulation may be so diminished, as no longer to penetrate the minute vessels of the cutaneous surface, in which its place is supplied by a thin serous fluid ; and after death, a deficiency or even total absence of blood is observed, not only in the large arteries, veins and right side of the heart, but likewise in the capillary system, which is remarkably pale and colorless. In these cases, the membranous and parenchymatous tissues, such as the brain, lungs, liver, kidneys, alimentary canal, and the parenchyma of the heart and muscles, are also remarkably pale and exsanguinous." The red globules

of the blood appear to be that part on which its vivifying and calorific properties chiefly depend. This is proved by the fact, that when they exist in their normal proportion, the different functions of nutrition, secretion and excretion, are all normally performed; the body is well developed, the skin reddened, the color of the blood bright, etc.; while in persons in whom they are much below the normal standard, the functions of nutrition, secretion and excretion are inactive, the surface pale or sallow, the muscles flabby, etc.

1018. We have now to examine how this diminution of the red globules is produced, and what relation the uterine system has to this condition. In many cases of chlorosis it has been observed, that if at the age of puberty the catamenia did not become established, or, if established, that it had become suddenly checked, that the health began to deteriorate, and this condition of the blood was produced. "It might seem difficult," says Dr. Williams, "to understand how irregularity of the uterine function operates in producing this condition. That in many cases it is a cause, and not an effect of anæmia, is plain from the well-known fact that no signs of anæmia have occurred until cold, over-exertion, or mental excitement, or some circumstance has suddenly checked the flow of the catamenia; it has not returned; and then the patient begins to lose color, and gradually to exhibit the anæmic state. In many cases, I have known this to occur in young females, who have previously suffered from acute rheumatism, implicating the heart. It would seem that, in these cases, some injury is done to the blood-particles, and to the powers by which they are repaired; this is manifest, not only from the pallidity, but from the yellowish and almost greenish hue which the complexion sometimes presents, and which obviously depends on a discoloration of the textures by the altered blood, as in the neighborhood of a bruised part. In some of these cases of chlorosis, the appetite is depraved; there is such a complete disrelish for animal food and other nourishing articles, and such a craving for sour things, and even for matters destitute of nourishment, as chalk, cinders, etc., that it might be supposed that this perverted appetite is the cause of the anæmia, by deterring the

patient from taking that food which is capable of making red blood; and undoubtedly such an appetite, when indulged, must contribute to this result; but it is not so constantly present as to be considered the chief cause."

1019. Again, the disease may partly depend upon a lesion of innervation, the uterus and ovaries being supplied with nerves from the sympathetic system, which also supply the organs of digestion and sanguification; a disease of the uterus and ovaries will affect the formation of the blood through the medium of the nerves. That this is the case in structural and functional disease of these organs can not be doubted, for in almost every variety of uterine disease we find that the digestive organs sympathize greatly with the diseased uterus or ovaries. In proof that this is one cause of the malady, Andral states that "it frequently happens, that by stimulating the nervous system of these chlorotic patients by the physical and moral emotions of matrimony, we produce a more natural complexion and color of the whole cutaneous surface, thus indicating a correspondent improvement in the process of sanguification; and in proportion as the anæmia disappears under the influence of this new modification of the nervous system, the whole train of diseased action, the difficult respiration, constant sensation of uneasiness and listlessness, impaired digestion, gastralgia, vomiting, tympanitis, and limpid urine, together with all the strange nervous symptoms, which seemed dependant on some organic altorations of the solids, gradually subside and eventually vanish, as a fresh supply of blood is generated in the system.

1020. *Causes.*--The causes of chlorosis are all such as depress the vital powers of the system; the special influence of derangement of the menstrual function has already been noticed. The primary cause of the menstrual derangement, and thus of chlorosis, may have been a delicate, feeble state of the constitution from childhood, the vital powers not being sufficient to perfect the development of the uterine system and its physiological function, menstruation; this may again react in the manner spoken of, upon the general health, and chlorosis is the result. It may also be produced by any exhausting discharge, as menorrhagia, profuse

menstruation, leucorrhea, etc. Or by insufficient and innutritious food, crowded and ill-ventilated apartments, residence in a damp, cold, or marshy locality, etc.

1021. *Symptoms.*—The symptoms of chlorosis are at first those of debility; the patient is weak and languid, dislikes to take exercise, and is easily fatigued; she is not cheerful, but dull and listless; there is a habitual melancholy; she loves solitude, and weeps without cause. The appetite is impaired and perverted, food is loathed, and innutritious substances desired, as chalk, dirt, etc. The bowels are nearly always constipated, the tongue is coated with a dirty white fur; there is flatulence, and all the symptoms of indigestion, sometimes tympanitis; the breath is offensive; there is usually more or less frequent headache, palpitation of the heart; the pulse is quick, weak and compressible.

1022. In the aggravated form of chlorosis, says Dr. Ashwell, "Debility, languor, and listlessness, are more marked; depression is more complete; the appetite is more morbid, with a desire for slate-pencil, chalk, acids, pickles, and other things equally pernicious. The complexion becomes still more characteristic: it is a yellowish, dirty green, and the lips, gums, conjunctiva, and the lining membrane of the mouth are bloodless; the tongue, too, is of a still paler white, and being soft and flabby, it is easily indented by the teeth; the breath is offensive; there is nausea; sometimes vomiting, and frequent heartburn; the bowels, though generally constipated, are occasionally in a state of irritable and painful diarrhea. There is acute and anomalous headache, attended by every variety of distressing sensation, such as heavy weight in the front or at the back of the head, vertigo, fixed and intense pain in one particular spot, paralytic feeling and neuralgia. There is a dark line underneath the eyes, about the alæ of the nostrils and at the angles of the mouth; the eyelids are dark and œdematosus in the morning; the ankles and legs are frequently so at night; the cellular or soft tissues are flaccid, and the surface generally, especially of the upper and lower extremities, is cold. If menstruation has continued up to this time, its intervals become more distant, the discharge itself is scanty

continuing to flow only for a few hours, and in quality it is often serous and pale, and of offensive odor. There is sometimes a general dryness of surface; the skin is no longer resilient; there is a splitting and brittleness of the finger-nails; the hair loses its glossy brightness, falls off in large quantities, and alters in color. It is not uncommon in advanced chlorosis, for the abdomen to be full and painful; and without decided phthisical complication, there may be slight, short cough, pain under the left mammae, and hysteria in a variety of forms. At this period, one or several symptoms being confirmed, so far mislead as to induce the belief that the lung, the brain, the liver, or the heart may be organically diseased. Such is the malady when fully developed."

1023. *Treatment.*—In the treatment of chlorosis we have three prominent indications to fulfil: *First*, to remove any disease which may exist independently of the chlorotic condition, and which may, by its continuance, tend to keep it up. *Second*, to restore the blood to its normal condition, by the use of tonics and iron, nutritious diet, appropriate exercise, the use of the bath, etc., and *Third*, to stimulate the uterine organs to a performance of their natural functions.

1024. Diseases of the system existing in connection with chlorosis will have to be treated in the usual manner, having especial reference, however, to the debilitated condition of the system. Two of these, however, deserve special notice: disorders of the stomach and constipation of the bowels, or what is of rare occurrence—diarrhea. We have already seen that the stomach is the first organ specially affected in this disorder, that the appetite was vitiated, that it was frequently accompanied with nausea and vomiting, that the tongue was coated, and the breath offensive. As a healthy condition of the stomach is of the first importance in the treatment of any disease, and especially of this, where the entire success of the means we adopt depend upon a normal absorption and assimilation of the remedies given, and a healthy performance of the digestive functions, so that we may restore the deficient elements of the blood; it becomes necessary that we have some definite knowledge of the condition of this viscus in chlorosis. According to Dr. Budd, "the continued disturbance

of the secreting function of the stomach seems to lead to an inflammatory, or a catarrhal state of the mucous membrane. The digestive power is greatly weakened, and, under the influence of unhealthy or decomposing mucus, the starchy principles of the food undergo fermentation in the stomach, by which large quantities of lactic acid are formed. The undue acidity of the stomach, or the great disturbance of its secreting function, lessens the secretion of the liver, and the continuance of the disorder causes a sallow appearance of the countenance." In many cases of chlorosis this condition of the stomach exists, and it is so prominently marked that it can hardly be mistaken. What is the remedy for this condition of the stomach? Can it be overcome by the use of tonics, iron, cathartics, and the various remedies recommended for chlorosis? It may; but, in my opinion, the easiest and surest way of restoring the tone of the stomach, is to first remove the morbid secretions from it by an emetic, which will not only accomplish this, but will also stimulate the stomach to a normal performance of its functions, and modify, by the shock which it gives to the system, the abnormal nervous irritability. I may be wrong in estimating the proportion of cases in which this condition of the stomach exists, but in all of the cases that I have seen, with but one exception, it was present. My use of emetics, in such cases, commenced as a dernier resort; in the first case I had employed the means recommended by authors for the disease, but the patient gradually declined under the use of them, the condition of the stomach was evident, and I determined, notwithstanding her weakness, to employ an emetic; the Compound Powder of Lobelia was administered in infusion in the usual manner, accompanied with copious draughts of warm water, free emesis occurred, and the quantity of decomposing nauseous mucus thrown off of the stomach was astonishing. The immediate benefit derived from the emetic was surprising, at least it surprised me, as I was fearful of the result; in a few hours afterward, the patient expressed a desire for her supper, which she had not done for three months before, and from this date, under the influence of mild tonics, the soluble preparations of iron, nutritious diet, and exercise, she rapidly regained her health. I have used emetics

in several other cases of debility at this period with equal advantage; but in none but this in which chlorosis was so well marked. The only account of the use of emetics in this disease that I have seen is by M. Colombat. He says: "Emetics, first proposed by Mercatus, (1554,) may be appropriate for cases in which the disease is complicated with some gastric disorder. Buillon relates that all the remedies employed for the cure of the daughter of a goldsmith, aged eighteen years, and affected with chlorosis, proved unsuccessful; but he adds that the young patient was thrown from a carriage, which gave her a great fright, and brought on abundant vomiting of bile; from that moment her appetite returned, her face resumed its natural color, and her health was perfectly restored in a short time."

1025. Constipation of the bowels is a very frequent condition in this disease, and it is of much importance that it should be overcome; the cause of the constipation is probably torpor of the bowels, caused by deficient innervation. To remove this difficulty, the majority of authors recommend aloetic purgatives—aloes and some of the preparations of iron. But a much better remedy will be found in the Compound Tincture of Tamarac, or Bones' Bitters; this may be given in doses of a table spoonful three times a day, half an hour before eating, and if it should be necessary, its action may be assisted by the use of laxative enemas.

1026. Looking back over the experience of twenty years, I do not know but what I have given "the emetic" too strong a recommendation and too wide a use; and yet I let it remain as written for those intractable cases with foul tongue and breath, that will not yield to other means. In some cases the Sulphite of Soda, or Sulphurous Acid, or Chlorate of Potash, will rectify the wrong of the stomach. In others, minute doses of Podophyllin with Hydrastia will be indicated. Nux Vomica, and Ignatia are the remedies when the special indications of nausea, sallow expressionless mouth and abdominal pain, or morning chills, cold extremities, and peculiar constrictive pain in the epigastrium, are present. Graphites, Cuprum and Arsenic, are possible remedies in these cases, the indications heretofore given

being prominent. The compound Syrup of the triple phosphate of Quinia, Strychnia and Iron, will prove a good tonic and restorative, when there is an indication for Quinine. The compound syrup of the hypophosphites, or the hypophosphite of lime, when there is a tendency to aplastic deposits in cellular tissue, or disease of the lungs. Our indigenous bitters vary in their medicinal action, and there is room for careful observation and selection of them here. I would especially name the Senecio and Aletris as worthy of trial.

1027. It should not be forgotten that chlorosis is dependent upon or associated with disease of the reproductive function or organs, and this should be carefully looked for. Non-appearance of the menstrual flow, suppression, and menorrhagia, may all be causes, and a right treatment to correct these wrongs will be absolutely necessary to success. Undue sexual excitement, from any cause, may prove sufficient to produce the disease.

1028. In regard to the hygienic treatment, I can not do better than to quote from M. Colombat. He says: "Whatever may have been the cause that has brought on chlorosis, we should remove the patient from all exposure to cold and humidity; she should breathe a dry, pure and moderately warm air, and it is because these conditions exist during the spring and autumn, that those seasons are most favorable to the cure of the disease. A dry, breezy situation, in a sunny exposure, ought to be recommended. Clothes, which by the nature of their tissue, slightly irritate the skin, are to be preferred to any others. Flannel worn next to the skin, and especially alcoholic and aromatic frictions to the whole surface of the body, should likewise be proposed, with the view of exciting the action of the capillary vessels, of inviting the blood into them, and promoting perspiration. The food must consist of roast meats, fresh eggs, farinaceous vegetables, ripe fruits, and bitter and aromatic plants; for example, succory and celery. As a drink during meals, we may employ with advantage, a mixture of chalybeate water with wine. Between the repasts, the patient may allay her thirst with some refreshing, slightly acidulated drink. Nevertheless, though a careful regimen ought to be strictly observed, it is not well to be too exclusive; if we meet with great reluctance in giving up the injurious

articles which the patients desire, it would be necessary at first, to respect their longings, however strange they might seem, and even to satisfy them, unless they were directed to substances evidently hurtful. We should always commence by regulating the meals, and by forbidding fruit, salad and all crude articles; we ought, moreover, to consult the digestive functions, and wholly proscribe articles well known to be indigestible.

1029. "Whatever be the aversion to exercise felt by chlorotic persons, we ought invariably to insist upon its employment, regulating it, however, by the strength of the patient. Should the muscular debility be so great as to prevent her from walking, we must resort to mixed and passive exercises. Riding in a carriage, or still better, on horseback, especially if a man's saddle is used, in open and elevated places, where the air is pure, are proper modes of exercise, particularly if pleasant conversation can be added to the charms afforded by diversity of views and landscapes. Boating excursions, which exert a favorable effect upon all the organs, and which unite to all the advantages of exercise, that of being agreeable to young persons, and of producing a useful stimulation by the presence of individuals of the opposite sex; music, which occasions a salutary excitation in lymphatic persons, and finally, sea-bathing, and swimming in running water, are different hygienic means, which it is well to recommend to nervous, sad and melancholy women, and to those of great moral sensibility. Traveling can not be too strongly recommended to persons in whom the disease is kept up by acute sorrow, or by any moral affection whatever; the use of mineral waters taken at the springs, offers in this respect, incalculable advantages, not only from the medicinal action of the waters themselves, but also, because the patients enjoy at such places the various charms of a numerous and brilliant society, and attractions which are constantly changing.

1030. "The use of very tight corsets ought to be forbidden; sleep should not be protracted beyond eight or nine hours, and care must be taken that the patient's bed is neither too warm nor too soft, because such beds often increase the feebleness and constipation of very sensitive women, especially those in whom the

chlorotic state has been developed and maintained under the influence of disappointed love. We should forbid exciting drinks, wine, highly nutricious food, vivid emotions, the frequenting of balls and shows, the reading of highly-wrought romances, the examination of lascivious pictures, and lastly, we should, as far as possible, suppress all circumstances capable of disturbing the sensibility, or of exciting the passions too strongly."

HYSERIA.

1031. By the term hysteria, we understand a peculiar nervous affection not entirely confined to females, but in a large majority of cases seen in them, and generally the result of some structural or functional disease of the uterine organs. Dr. Condie states that he "has repeatedly seen all the phenomena characteristic of hysteria in the male subject. The fact of their recurrence in males is also stated by Sydenham, Louyr, Villermay, Georget, Ferriar, Frotten, Conolly, and others." We have to consider it, however, only as it occurs in females.

1032. *Pathology.*—Various opinions have been advanced in regard to the pathology of hysteria, and yet none of them appear so reasonable as the most ancient one, that it arises from some disease of the uterine system. If we examine the anatomy of the uterus and its appendages, we find that it is abundantly supplied with nerves from the hypogastric plexus of the sympathetic, and from the spermatic or ovarian plexus of the same system. It will also be noticed that the hypogastric plexus is not formed solely by branches from the sympathetic system, but that it likewise receives numerous small branches from the spinal nerves, and thus a connection is formed between the uterus and spinal cord. As the uterine organs receive nerves from the sympathetic system, which also supplies the organs of digestion, sanguification, and secretion, it is evident that disease affecting the uterus will also affect more or less the entire portion of the system supplied with those nerves, by sympathy. This fact is well proved in almost all diseases of the uterine organs, the disease affecting in a marked degree the functions of digestion, assimilation, secretion, and excretion. The intimate connection

existing between the uterus and ovaries, through the medium of the nerves connecting the sympathetic system and the cerebro-spinal, and through the branches of the spinal nerves which pass through the hypogastric plexus to these organs, will account anatomically in part for the nervous irritability that is manifested. Dr. Carpenter says: "The clinical history of hysteria would lead us to suppose that the convulsive action depends rather upon some state of the blood which alters its relation to the nervous tissue, as its exciting fluid, than upon any change in the nutritive supply which it affords as would induce a more permanent disorder in the system. Taking all the phenomena into account, there seems much reason to think that a general excitability of the nervous system, such as is only an exaggeration of that which is characteristic of the female sex, is induced by some defect of nutrition, comparatively permanent in its nature." This defect of nutrition may occur in two ways; first, through nervous sympathy, as already mentioned, and second, through the circulation. It is supposed, and with much plausibility, that the constitution of the blood is affected by the condition of every tissue with which it comes in contact, so that if any diseased condition of the uterus exists, the circulation of blood through that organ, will change the condition of the entire circulating fluid.

1033. *Symptoms.*—I can not do better than to give the symptoms of this singular and ever-varying malady as they are described by Newton and Powell.

"Most of the disquieting feelings, strange and wayward fancies of nervous females arise from hysteria. A paroxysm is usually preceded by general uneasiness, anxiety and oppression; a sensation of choking, or as if a ball were rising up from the abdomen into the throat, to which sensation the appellation of *globus hystericus* has been given; stiffness about the larynx, headache and cramps. M. George says: 'Hysteric patients in the hospital of the Salpetriere, are so well accustomed to take warning by these precursive symptoms, as never to be seized unexpectedly; they go to bed, and are tied down until the fit is over.' Sometimes the paroxysm ends here; but more generally the anxiety and sufferings increase, extreme depression of spirits, often weeping,

ensues; there is a painful sense of stiffness and coldness of the limbs; noise in the ears; vertigo; confusion, and to these rapidly succeed temporary loss of sense and consciousness, and of command over the voluntary muscles, during which, the most vehement struggles are alternated with moments of repose. Occasionally, there is a tetanic rigidity of the muscles of the trunk or back, and the body is thrown up in the form of an arch, but the limbs are more generally contorted; the patient often beats her breast, tears her hair, grinds the teeth, bites the tongue or lips, or otherwise injures herself. The assistants are often struck, bitten or scratched, and have vociferous epithets heaped on them; terrific screaming, sobbing, laughing and vacant staring may rapidly succeed each other. During the struggling, the heart beats tumultuously, the countenance becomes flushed and swollen, and the breathing laborious. After a variable continuance of from a few minutes to some hours or even days, of repeated intervals of struggling and repose, as here described, the patient either falls asleep or gradually returns to a state of consciousness and her ordinary condition, save feelings of fatigue and soreness, which disappear in a few days. Such are the prominent features of the hysterical paroxysm; but it varies greatly in intensity and duration. The convulsions may be severe, with lucid intervals, and of frequent occurrence for days, or a deep, quiet sleep or coma may fill up the intervals, from which nothing can arouse the patient. In some women, the paroxysms return monthly, or at the menstrual flow; in others, at variable intervals dependent on disturbances of the physical or mental equability. It is remarkable that plumpness of person, roseate hue of countenance, and general appearance of good health are not incompatible, but often attend the worst of sufferers from this affection through life, so faithfully is the nutritive function preserved amid the many and frequent storms of nervous functional derangement.

1034. "So variable are the protean shapes which hysteria may assume, that there is scarcely an organ or its function that may not be invaded and the gravest maladies counterfeited, calculated to lead to errors in diagnosis and prognosis, compromising, if not

the life and welfare of the patient, at least the reputation for close discernment of the practitioner.

1035. "Sudden, extreme, and anomalous symptoms should not be hastily pronounced upon at the bedside of the patient. Hysterical distention of the intestines by flatus has been mistaken for pregnancy; hysterical hiccup, for that of approaching death; hysterical colic, for acute peritonitis; hysterical stridulous breathing, for croup; hysterical cough, for hooping-cough; hysterical limpid urine, for diabetes; intense urinary irritation, for nephritis; interior irritation, for inflammation; hysterical headache, for encephalitis; hysterical tenderness and swelling of the knee-joint, for white swelling; hysterical coma, for apoplexy; hysterical waywardness, for mania, etc.

1036. "*Diagnosis.*"—The suddenness of an attack of epilepsy, the cry, the fall, the distortion of the features, frothing at the mouth, livid turgescence of the face, small quantity of air admitted in inspiration, and the profound coma are sufficient to distinguish it from the hysterical paroxysm which certainly simulates epilepsy more than any other affection. The want of correspondence between the violence of functional disturbance and the symptoms of organic disease will generally guide in distinguishing hysterical imitations or counterfeits. The history of the individual will aid; examination of the spine also.

1037. "*Causes.*"—Whatever impairs the constitution and increases the excitability of the nervous system, may become an exciting cause of hysteria. The anemic state favors its incursion; an irritable habit produced by errors in early physical training; early vicious practices; emotional and imaginative reading; spinal, uterine, or gastric irritation; strong and impassioned feelings; startling sights, sounds, or intelligence; grief, jealousy, or unrequited love. The ancient doctrine was that the uterus was the seat of the disease, but modern physicians regard it as seated in the nervous system or centers."

1038. *Treatment.*—The treatment of hysteria will be of two kinds: palliative treatment while the paroxysm is on, and treatment for the radical cure of the affection by removing any uterine

disease that exists; strengthening the digestive organs, and restoring the general health.

1039. If called to see a patient suffering under an attack of hysteria, it is recommended to administer anti-spasmodics, as Assafœtida, Valerian, Musk, Castor, Scutellaria, etc. These agents may prove very efficient at times, but I have never had any success with them. I have used the Tincture of Gelsemuinum, in all cases marked by flushed face, bright eyes, and contracted pupils—the dose of our strong tincture being five drops every fifteen to thirty minutes until the patient is relieved. The tincture of Lobelia and Capsicum is the remedy when the pulse is oppressed and feeble, half-teaspoonful every ten or fifteen minutes, until it nauseates the patient, or produces vomiting, and I have found in every instance that nausea or vomiting and hysteria were incompatibles. There can be no doubt that impressions produced upon the mind have great influence in checking these paroxysms or in keeping them off, and the Lobelia and Capsicum will be found to produce such a disagreeable impression on the patient, that rather than experience the effects of the medicine, if she is certain that it will be given, she will resist, and that successfully, the approach of the paroxysm; at least this has been my experience. Sometimes it will be impossible to administer anything, on account of the spasmotic closure of the jaws, but the medicine can generally be introduced into the corner of the mouth; if it can not be given this way, it may be injected into the rectum, using double the quantity of the medicine that would be given by the mouth. Sir Charles Clark recommended strongly the cold water douche; bringing the patient's head to the edge of the bed, he would pour on pitchers full of cold water, until the paroxysms had ceased. In one case related by Dr. Watson, of a young lady, who for many days had been affected by trismus, so that she was unable to open her jaws, and could therefore neither speak nor eat, this treatment was adopted. Sir C. Clark being called in, recognized the nature of the affection. He had her placed with her head hanging over a tub by the side of the bed, and proceeded to pour pitchers of cold water on her face. Before he had emptied the second, the patient could scream and com-

plain, giving very audible indications that she could open her mouth. Dr. Watson says, "Although these patients get great relief by the treatment, they do not like it; and if they are convinced that it will be put in force, they will generally manage not to require it."

1040. The treatment after the paroxysms are over, must be conducted on general principles, any disease of the uterine organs existing must be removed, and the general health restored in the manner heretofore pointed out. In reference to the preventive treatment, Dr. Ashwell makes the following judicious remarks: "Where a tendency to the disease is evident, or where one or several decided hysterical seizures have occurred, it is evident that every prophylactic measure should be early and fully adopted. The remarks on the physical education of female youth already made, have a distinct reference to this important subject, and it can not be too strongly urged, that nature and common sense are the best arbiters in every matter relative to female health. Of all the influences capable of molding the female constitution, there are none so powerful as *light, air, food, and exercise*; and certainly, in reference to the two latter, nothing can be more at variance with propriety than our modern customs. It were easy to censure the way in which female education is conducted, but it would be to little purpose, till such plans are adopted as shall insure a higher appreciation of physical health and vigor. Happily of late some degree of reformation is observable; and the young ladies in our fashionable boarding-schools are beginning to realize its blessings. Animal food, and not farinaceous puddings and slops; wholesome malt liquor, instead of water, tea, or bad wine; running, jumping, and vigorous play, are more occasionally heard of without being condemned as fit only for the vulgar. By and by, it is to be hoped, that a sounder education will be built on these natural principles; and instead of days and weeks devoted, as they now are, to music, absurd accomplishments, and romantic nonsense, some hours, at least, daily, or weekly, will be given up to history, general literature, and the economy of every-day life."

CHAPTER XV.

DISEASES OF THE FEMALE BREASTS.

BY PROF. R. S. NEWTON.

1041. The space allowed to me precludes the idea that I should enter into a minute description of the minor affections of the female mammae. It is to those more terrible forms of disease of the breasts that I would call attention. There have been written many very excellent and learned dissertations on the subject in hand, and at a first thought it would seem that nothing had been left unsaid which could throw light on the subject; yet all these fine essays, all the deep research, all the experiments and statistics of the books, in a practical point of view, amount to but little. Physicians, with all their skill, and with a perfect knowledge of the experience and opinions of others, who have written on this class of diseases, still have to endure the mortifying spectacle of the unchecked ravages of such affections, and their own inability to arrest their progress. It matters little whether we are able to give the *rationale* of the cure or not, if any one really can affect a cure of a reasonable proportion of the more malignant forms of disease, to which the female breast is liable, he will have done more for humanity than all the learned essayists who have written on the subject.

1042. Having made this class of diseases a special study during the past sixteen years, and having had extensive opportunities to investigate the subject, I deem it my duty to offer to the profession my opinions, which, in many respects, will not differ from views advanced by others, but in other particulars the divergence will be very material. One of the simplest divisions of diseases of the breast is that of Mr. Syme, viz.:

1. Those in which there is merely derangement of its nutritive or sensitive action, causing simple enlargement, induration, and pain;

2. Those in which there is a collection of purulent fluid;
3. Those in which there is a morbid growth, limited to the part in which it originates; and
4. Those in which the growth is of a malignant kind,—that is, tends to spread, ulcerate, or fungate, and affect the patient's constitution.

1043. But to comprehend the nature of the diseases to which the mammae are subject, we must understand their structure and functions. So far as its anatomy is concerned, we may learn something of its complicity from the statement of Sir Astley Cooper, that he had heard a good anatomist say, "The breast is so complicated that I can make nothing of it."

1044. The breasts are situated on the anterior portion of the chest, upon the lower part of the platysma myoides muscle, upon the anterior portion of the pectoralis major, upon the serratus major anticus and oblique externus abdominis, and usually cover the space from the third to the seventh rib. The breasts are essentially glands, and, when well developed, constitute the most beautiful apparatus in the body. In location and number they differ in different classes of animals, there being generally two for each young one to be nourished by their milk. It has been often supposed, that the provision of a *pair* of breasts, as in the human female, was a provision of nature to supply nourishment for twins, when accidentally produced. This seems not to be the case, but to correspond with that common duplication of our organs, the natural provision for disease. If one eye is diseased, the other may serve the purposes of sight, and so, if one breast shall be the seat of disease—a very common occurrence—then the sound one will answer all the purposes for which the apparatus is intended.

1045. These glands are not situated on the chest so as to project the nipples directly forward, but rather laterally, so as to make the projecting nipple more convenient to the mouth of the child. Sir Astley Cooper has written very elegantly of the adaptedness of the breast to the convenience of the child, and I would suggest to the student a careful examination of the subject, as he will be more likely to detect even a slight variation from the normal position, and which will enable him to escape errors in

diagnosis. It is quite true that in those who have borne and nursed many children, the gland becomes pendulous, and the nipple may project forward without any disease being present. And in some tribes, as the woman of South Africa, etc., this elongation and relaxtion of tissue is so great that the breast may be, and is often, thrown over the shoulder, that the child may nurse as it is carried on the back of its mother.

1046. When viewed as a mass, the mammary gland is a coniform body, somewhat globular, with its base rather cupped to fit the bend of the ribs. The number in the human female is usually two, but cases have been recorded in which there were four, as was the case of a very respectable mother seen by Dr. Robert Lee and Sir Astley Cooper. [Cooper on the Breast, pp. 25 and 26.] But such cases are to be regarded as accidental developments. The mammary gland, in its structure, is not unlike that of the salivary and parotid glands, though on a more magnificent scale. It is made up of from fifteen to thirty lobes, varying in size from one-fourth to one inch in diameter, the size being greater as we approach the base of the gland. The lobes are again divided into smaller compartments, called lobules, and these again are subdivided into cœcal vesicles. The ducts of excretion are thoroughly lined with a beautiful tessellated epithelium; they all converge toward the nipple, upon which they open by a number of small apertures, ranging in number from ten to twenty. In their course they dilate into small ampulæ, which vary in capacity.

1047. The breast is divided anatomically into two parts, the *internal* and the *external*, both of which require careful study. Perhaps the true way to get a knowledge of the gland is to begin at its development, and end by giving its physiology. The mammary gland originates from the mucous layer of the epidermis, as a mere papillary projection, as early as the fourth or fifth month of foetal life. It soon develops into a complicated glandular structure, very irregular at first, but which acquires symmetry as birth approaches. All its parts converge to form the mammilla, or nipple, which is not, as is supposed by many, in the center of the glandular body, but nearest the abdominal margin, and also nearer the posterior than the anterior margin. Or, as Sir Astley Cooper

says: "from one-half to three-quarters of an inch above the lower edge of the pectoralis major." The lactiferous canals, which are thrown nearly together in the virgin, separate and enlarge in the lactating woman, and hence the nipple is increased in size, in such as have nursed. It is also longer, and can never after be made to acquire the solidity of the virgin state. Immediately on the apex of the nipple, there is a small indentation, caused by the orifices of the lactiferous tubes. Before puberty the nipple is quite smooth, but it is afterward masked by small papillæ, which increase in size up to forty years of age. It acquires a wrinkled aspect after the age of fifty, and in old women has a warty appearance. The shape of the nipple is sometimes, but not always, changed by nursing; in the virgin, it is a rounded cone, with the base or broad part resting on the breast, but in women who have nursed many children, their order is reversed, or else occupies some medium place between the virgin state and the last-named condition. Its color is very various, passing through all the shades of red, and is often even of a very dark muddy color; generally, however, it loses much of its color as old age advances, and during utero-gestation, is possessed of a higher color than at other times. I desire to be minute in the description of the various parts of this gland, for no one is competent to judge of its pathological states, until he is well acquainted with its entire structure.

1048. In respect to the cuticle covering the gland, I need only notice that it is much more thin and delicate in women with fair skins and red hair, and is hence more apt to be abraded by the mouth of the child. The nipple is generally darker than the rest of the breast, which is owing to the rete mucosum, the character of which will be more fully explained presently.

1049. The areola or colored circle of skin which surrounds the nipple, has received a large share of attention, and as I deem an acquaintance with its characteristics of considerable importance, I shall feel warranted in also referring to it, at least briefly. The areola is but a spreading of the nipple, or a continuation of it, and, like the nipple, depends for its color upon the rete mucosum. In girls, before puberty, it is simply a colored circle around the

nipple, but after puberty, during gestation, and in lactating women, it becomes more or less uneven, in consequence of the development of small tubercles, which open on the surface, contain a mucous excretion, but have no connection with the lactiferous tubes; in fact, they are not very different from the common sebaceous glands of the skin. The color of the nipple and areola depend very much upon the condition of the uterine apparatus, and this is so true that its physical aspect has long been held as quite expressive of the condition of the uterus. Owing to the presence of erectile tissue, and the abundant supply of blood-vessels, the nipple may be erected as in the case of the male penis, and this erection may depend either upon a state of the genitals, or upon the passions. It is a known fact that there is a most intimate relation of sympathy between the nipple and the uterus or the genitals, and that when the latter are in a state of excitement, the nipple is more or less erected, and that there is an increased engorgement of blood in the nipple at such times, and hence, too, the color of the areola is then deeper. On the other hand, to illustrate the completeness of this sympathy, it may not be amiss to state that many females are so sensitive on the nipples, as to be at once excited by passion when the nipple is touched or handled. Instinctively men recognize this law of inter-relation. It will be understood that the rete mucosum is but the coloring pigment which tinges the entire skin, and that it is the same in every respect as that deposited in the eye to confer color. The more abundantly blood be supplied, the more plentiful will be the pigment, and the darker the part so colored.

1050. The mammary gland is well supplied with blood-vessels, the chief arteries being the branches of the thoracica longa, external mammary, which, like the former, is a branch of the axillary artery, branches of the internal mammary artery, and another branch from the same. Outside of these principal branches, there are a number of less important branches ramifying through them, most of them reaching the nipple. The veins begin at the nipple in minute capillaries, and as they recede from it, unite in large trunks, entering the internal mammary and intercostal veins.

1051. The absorbents are very numerous and well distributed

These have for their office the separation of the milk from the blood. The nerves of the mammary gland are the axillary and the sternal, or the posterior and anterior branches of the above nerves, so called from their distribution. The posterior consists of the third, fourth and fifth branches of the dorsal nerves, all of which reach the nipple. The anterior consists of the reflected branches of the fourth dorsal nerve. To these nerves the nipple is indebted for its extreme sensibility. There are many openings and a few stray fine hairs in the areola, but the orifices do not connect, as before stated, with the lactiferous tubes.

1052. The gland is in reality inclosed between two fascia, or a single fascia which has separated to accomodate the gland, and which may be traced to the ligamentous substance covering the sternum. From this fascia numerous fibrous processes are given off, which Sir A. Cooper calls *ligamenta suspensoria*, since by them the breast is suspended in its situation. They are firmly attached to the skin, and though admitting the gland to change position enough to resist violence, they still hold it firmly within certain bounds. These ligamenta suspensoria distribute themselves upon the posterior surface of the skin, adding greatly to its whiteness and solidity. They also pass out from the gland, envelope the lactiferous tubes, and by connecting with the interior cutis of the nipple, prevent its displacement from the gland. Between these ligaments, if such they may be called, we find folds of fat, which, acting as cushions, prevent the gland from sustaining injuries from blows, etc. Indeed, these ligamenta suspensoria form a net-work, keeping all the parts together, and at the same time, increasing the secreting surface of the gland. The deeper-seated fascia sends its fibers in both directions—into the aponeurosis of the pectoralis major, and into the body of the gland, thus securing it to the body.

1053. The tubes of the mammary gland are both numerous and varied; e.g., the straight tubes of the nipple, the areolar tubes or reservoirs, the mammary ducts, differing only in their disposition or size; as a general remark, they enlarge as they pass from the nipple to the reservoirs. Along side of these tubes, we find the arteries, equally distributed, and conferring on the tubes great

vascularity. The veins do not run parallel always, and are less branched, the functions of the parts requiring a greater influx than reflux current. The tubes are lined with a folded mucous membrane, which is highly vascular. It must be borne in mind, that most of these ducts are entirely separate and distinct from all others, a fact which is easily determined by injection.

1054. The gland itself is a conglomerate structure of small glands, the interspaces, when not occupied with tubes, arteries, veins, or nerves, being filled with fat. The glandules vary in size from the head of a pin to that of a buck-shot, and when injected, are nearly round.

1055. Of the milk-cells, little need be said, since their character can not materially further the investigations of the pathologist. Into these milk-cells the milk is secreted from the blood, and of course, if not in a physiological condition, soon present us with a pathological state. The milk passes from these cells to the mammary tubes, and after reaching the areola, is deposited in the reservoirs ready for use.

1056. The axillary and internal mammary arteries furnish the gland, and though greatly distributed, it is only necessary to regard the above larger trunks, as the sources of supply. The veins of the breast empty into the axillary, the cephalic, the intercostal, the internal mammary, the external jugular and subclavian. The veins of these glands are often engorged in certain diseased states, and some of the best surgeons have been in the habit of opening them, to allow the accumulated blood to escape. There is no doubt but it affords, as I have often witnessed, immediate relief, and I greatly prefer the operation to the more tedious one of using leeches to accomplish the same end. The same thing can, however, be accomplished with great certainty, by other treatment, as I shall have occasion hereafter to show.

1057. I shall be sufficiently understood, if I say, that the breasts are literally permeated by absorbent vessels, or ducts, which, when many unite, may sometimes make a tube as large as a small quill. Such a one is found on the inner side of the axillary vein, and between the first rib and clavicle. These tubes are intimately connected with the blood-vessels, and with the

glandules, etc. These absorbents are frequently diseased, and indeed, many of the more malignant forms of mammary disease may be traced to that source.

1058. The nerves of the breast are derived from the dorsal branch of the spinal column, and are so minute in their ramifications that the anatomist can hardly promise himself success in tracing them. I need not attempt to trace the reflex nerves, for the labor would not be satisfactory, even though I had space at command.

1059. It is an interesting study to trace the effects of gestation and lactation on the breasts, and though the profession have a sort of general and indefinite knowledge on the subject, it must be admitted that too few entertain correct views on this point. To arrive at expertness in reading the phases through which the breasts pass, requires a close and careful study of the organ in the living subject, which modest women, before marriage, will not permit, and on others the circumstances are usually adverse. But before we attempt to explain the nature of the changes which are wrought on the breast by gestation and lactation, it may be well to inquire *how* any such sympathy can exist between the uterus and its appendages, and the breasts? It is presumed that no intelligent physician will deny that such sympathy exists, and hence I shall not here refer to the evidences upon which the assertion is based. Any treatise which is perfect should examine the uterine and mammary systems as constituting the same apparatus, but as this has not been done, I can only briefly show why this should be so.

1060. The sympathy between the uterine appendages and the mammary glands, has been explained by supposing that the epigastric artery sent more blood to the internal mammary artery, and hence to the breast itself, during gestation than at any other times; and while I admit that this is altogether probable, the manifestation between the genitals and the breasts, or the mammary glands and the uterine appendages, is so instantaneous, as it were, that I think we must look to more rapid transmission of influences than such as can be conveyed by the circulation. This sympathy is entirely nervous, in the first place, and whatever

influence of a permanent nature is transmitted by the blood, is of a secondary character. The great sympathetic nerve, whose branches are incorporated with the dorsal nerves of the breast, is also largely distributed to the uterine appendages. It is to be understood that other parts of the system are also reached by the great sympathetic, and other parts, also, partake of the sympathy, but in a less marked degree. I have already stated that the nipple is furnished with erectile tissue, and hence we might expect it to be more prominently effected than other organs in which no such tissue exists. Very many facts, illustrative of this sympathy, might be cited, but one, it seems to me is quite sufficient, i. e., advantage is taken of this sympathy, by the reckless and fearless, to produce abortion by simple irritation of the nipple at certain periods of gestation. And whether we are enabled to give a satisfactory explanation of the phenomena or not, the mere fact stands undisputed, and we must base our conclusions on it.

1061. During gestation more blood is sent to the breasts, their color is darkened, and they become more solid, or even swell, and become quite painful. They are tender to the touch, and if it be in a first pregnancy, they at once undergo that evolution by which they are matured. The nipple enlarges, the areola becomes much darker, and the papillæ become protuberent; in fact, the entire organ looks as though it were, as it is, engorged. The increase of the diameter of the areola is from one to two inches. The increased darkness of the areola depends upon the more abundant supply of the rete mucosum, and by its being rendered more visible in consequence of the stretching of the skin, which is the necessary result of the enlargement of the gland. The areola will also be found thickened, in consequence of the development of the papillæ. The glands and blood-vessels around the nipple, and on the body of the gland, will also be more prominent than before.

1062. After lactation has been established, all these indications, except deepening of the color of the nipple and areola, are increased. In old age, the tubes of which I have been speaking, become more or less ossified. I need not here enter into a descrip-

tion of those influences brought to bear on the female breast about the time of the cessation of the catamenia, as I shall have occasion hereafter to treat this subject more in detail. I have given such facts as I conceive to be necessary in the proper study of the diseases of the breast, and to which too little attention has been paid by surgeons. Perhaps no surgeon in America, of my age, has had more experience in treating the diseases of the female breast than myself, and certainly none have been more successful; which success I imagine to depend both upon my knowledge of the glands and the plans which I have adopted for the treatment of their diseases. From these considerations, I feel warranted in laying my experience before the profession, fully believing that when others are guided by the same principles that I have adopted, they will be equally successful.

1063. Numerous morbid specimens ought to be carefully examined, for I assure you that an intimate acquaintance with their appearance, structure, and physical characteristics, will be highly advantageous to you, both in determining the kind of diseased growth, and its mode of development. Were this not so, experience could never add to the success of a surgeon; your knowledge of the general pathology of such growths would be all that would be requisite to enable you to treat them with entire success—a supposition which is not to be entertained. By comparing together a great number of such morbid structures, we learn to recognize the peculiarities of each, and to detect those peculiarities in practice. If there is any science in surgery and medicine, of course it will be applied only when we understand the pathological states that are to be reduced to physiological conditions. There are certain forms of morbid structure, for the removal of which there are specific agents, and nothing but careful examinations of those structures can enable you to diagnose them.

1064. If you shall have first examined these structures, and made yourselves perfectly familiar with their pathology, the strong presumption is that you will not commit those grave blunders which have so disgraced many honorable members of the profession. The necessity for thoroughly studying the char-

acter of these growths, in all possible ways, will be sufficiently obvious by remembering that diseases of the breast may be properly divided into two great classes, the curable and the incurable. The physician, who is entitled to be called scientific, never guesses at what he is to do ; if he does, he is a quack who strikes in the dark, and who is as apt to kill as to cure. I have so frequently seen operations on the breast, which I now know were unnecessary, that I feel it my duty to guard you against rashness in this respect.

1065. The diseases of the female breasts are exceedingly numerous, and are greatly modified in different constitutions. What would be a dangerous tumor in one case, and which would require a prompt operation, would be simple in another, and require no operation. I need hardly call your attention to age and the general health, to impress this truth, and yet some surgeons, judging from the language of the books, and from what I have seen, act upon the principle that a tumor is a tumor, and must, in all cases, be removed. I venture to affirm, that one-half of the tumors of the breast which are called cancer, are not truly such, and in this opinion I do not stand alone.

1066. The causes which give rise to these tumors are also so exceedingly varied, that the fair presumption is a variety of effects ; opposite causes usually producing opposite effects. Sir Astley Cooper has drawn a delightful picture in his excellent work on the breasts, after having endeavored to impress upon the profession the great necessity of carefully manipulating the living tumor, and of scrutinously examining the morbid specimens on exhibition. He says :

1067. " The result of such knowledge is frequently the source of great security and happiness to a person afflicted with a disease in the breast, as well as of great satisfaction to the surgeon. I have scarcely witnessed a stronger expression of delight than that which has illumined the features of a female — perhaps the mother of a large family dependent upon her for protection, education, and support — who, upon consulting the surgeon for some tumor in her bosom, and expecting to hear from him a confirmation of the sentence she had pronounced upon herself,

receives, on the contrary, an assurance that her apprehensions are unfounded. Pale and trembling she enters the surgeon's apartment, and, baring her bosom, faintly articulates—Sir, I am come to consult you for a cancer in my breast;—and when, after a careful examination, the surgeon states, he has the pleasure of assuring her that the disease is not cancerous—that it has not the character of malignancy—that it is not dangerous, and will not require an operation; the sudden transition from apprehension to joy brightens her countenance with the smile of gratitude; and the happiness of the moment can hardly be exceeded, when she returns, with delighted affection, to the family from which she had previously considered herself destined soon to be separated by death, with the alternative only of being saved by a dubious and painful operation."

1068. For the purpose I have in view, I shall adopt the very natural classification of affections of the breasts, which is made by Birkett, viz.:

1. Diseases occurring *before* puberty;
2. Diseases occurring *during* the establishment of puberty; and
3. Diseases occurring *after* the establishment of puberty.

1069. It will be apparent that the diseases occurring in either of these periods will admit of a very wide and diversified subdivision, each of which will be examined in detail, as I progress with the general subject. It is difficult to determine at what precise age the earliest development of mammary disease occurs, but within a few days of birth. The mammary gland, or the rudimentary gland, begins to develop after the sixth month of foetal life, and, like any other gland, may at once become the subject of disease. Diseases occurring in the mammary glands *before* puberty, and especially when the patient is still an infant or child, are mostly of an inflammatory character, and they vary only in the extent and termination of that inflammation.

1070. Within two or three days after birth, the mammae, or their rudiments, acquire a state of tumefaction, and soon there is observed, issuing from the papillæ, a milk-like secretion, which of itself, and independent of all other circumstances, is a demonstrative proof of the preëxistence of the secreting gland. Many

mothers, exceedingly ignorant of the processes of nature, and over-careful, become very anxious to have this secretion removed, or to have the excretion stopped. To accomplish its stoppage, they resort to frictions, etc., and inflammation results as the consequence of such *harsh* treatment of the tender gland. The attention of the parent is first called to the part by the hardness, tumefaction, and tenderness which the child evinces when it is touched. Now all this is natural enough, and, if let alone for a few days, will cease of itself, and leave the parts in a healthy condition. It is true that in rare cases, the tumefaction may last for some days; the natural inflammation may assume a somewhat intense degree; but still, if it be let alone, it will resume its natural state in a short time.

1071. Nothing can be more irrational than to rub, squeeze, pinch or irritate so tender an apparatus as the developing mammary gland. Where this injudicious course is adopted, there may be extensive and acute inflammation, ending in abscess, in which event the assistance of the physician will be needed. The treatment must, in every case, be on general principles, modified by the tender age and constitution of the patient. The inflammation often extends beyond the glandular structure, as was the case with a child less than one month old, seen by Mr. Wagstaffe, in which the inflammation extended from the upper part of the breast down the right side to the umbilicus. Where the attack is so severe as in this case, the inflammation spreads very rapidly over a large space. To bathe the inflamed surface with cooling lotions, and to poultice the abscess which may form, is about all the treatment that is required.

1072. Again, the tumefaction and pain may follow the cessation of hemorrhage from the vulva, as was observed by Barrier in a female infant only five days old. In this case there was but little attending inflammation, yet the case was interesting as another evidence of the very close sympathy existing between the mammae and the genitals.

1073. Birkett reports a case in which there was an abscess formed in the breast of a child three months old, and whose mother stated to Mr. Birkett that, unlike her other children, the

breasts of this one had not had the usual milky discharge from the mammary gland; and in another case, where the child was sixteen months old, an abscess was present, and the breast swelled very much, in which there was also a discharge from the vulva, showing that the genitals were in an irritated condition—another evidence of the sympathy of the parts. But however often we may be called to treat such tumefactions and swelling of the infantile breasts, we shall find the symptoms rapidly subsiding after the slightest attention; and that in no case do they end in serious lesions.

1074. When we approach nearer to puberty, the breasts become more subject to disease, and not unfrequently we shall find, that they then readily assume a form of malignancy which demands our utmost attention. And what adds to the difficulties attendant on their treatment, is the modesty of those thus afflicted, and their indisposition to permit examinations to be made, while the disease is yet in its incipient stages.

1075. With the complete development of the ovaries, and the establishment of the catamenia, the mammary glands rapidly enlarge, and assume their perfect shape; the areola deepens, and the nipple evolves into its natural prominence, of course not acquiring the size and shape which it is afterward to attain. Changes thus occurring are perfectly natural, and do not commonly give rise to disturbances which require surgical attention; yet they sometimes do, and it is therefore incumbent on me to make some suggestions respecting those diseased conditions.

1076. We are to bear in mind that this natural period of female development varies with climate, habits and constitution. It may be stated to range from nine to sixteen years of age, and M. Bourgat Saint Hilaire relates the case of a little girl, born in Louisiana, on the 13th of December, 1837, having from birth *well-formed* breasts, and having the pubes covered with hair, as in a girl of fifteen. The catamenia appeared when the child was three years of age, and continued to appear monthly, as in women generally, after puberty has been fully established. The quantity of the catamenial discharge was as great as in women fully developed; the time of the discharge being usually four days

This is certainly an anomalous case, but none the less interesting as a fact. A similar case is reported in vol. 2, of the Medico-Chirurgical Transactions, by Sir Astley Cooper. This child was the daughter of a waterman at Lincoln. The catamenia appeared before she was three years old; at first occurring at long intervals, but becoming more regular as she acquired age. "The catamenia," says Sir Astley, "exactly resembled that of most women, except that it was rather of a darker color." The breasts were very full, being as large as those of most women at twenty years of age. Her pelvis was well developed, and the pubes covered with a light-colored hair. She did not seem to possess the sexual desire, and was not more modest than most children at her age. When six years of age she menstruated regularly every 21st day, the discharge lasting four days. She had frequent leucorrhœa, and when in her seventh year, exhibited much more modesty than before. This girl had other sisters who did not manifest any forwardness. Other cases have been recorded, but these are quite sufficient to show that the breasts, in connection with the ovaries, may be developed at a very early age; while on the other hand, numerous cases are recorded where neither the ovaries nor the breasts were ever developed.

1077. Even at the early age of twelve, or at the period when puberty is being established, the breasts may become the seat of cancer, and other malignant diseases, though such instances are not common, by any means. Mr. Bransby Cooper relates the case of a girl aged 13, on whom he found carcinoma medullæ of the breasts, which was removed, and who died, notwithstanding the operation. Lyford reports a similar case in the London *Lancet*, and also refers to a specimen in the museum of St. Bartholomew's Hospital, which was taken from a girl aged sixteen years.

1078. The diseases most apt to attack the mammary gland, at the period of puberty, are inflammation and its sequelæ, and often ending in chronic abscess, which, if suffered to run on, may finally develop itself into malignant tumor. Girls, at the establishment of puberty, have most to fear from tubercular diseases of the lungs, mournful instances of which we see almost daily.

1079. The surgeon who expects to master the treatment of diseases incident to the breasts, must not neglect to glean from every source all such information as will lead into an understanding of the basis of those pathological states which form their development. He ought to examine with a microscope the composite cells of every morbid growth, the pus, the fibres, the blood-vessels, the tissues, and the chemical nature of the attendant secretions.

1080. As it will be to the diseases which affect the mammary glands after puberty, that I shall direct your attention more particularly, I close this lecture by reminding you of some of the effects of common inflammation in the breasts. This has been divided, by Sir Astley Cooper, into three stages, which he very appropriately terms adhesive, suppurative, and ulcerative. Adhesive inflammation produces a firm and very sensitive enlargement, which, in consequence of the tardiness of the dense fascial membrane in yielding to the enlargement, often occasions excruciating pain and suffering to the patient. The solidity of the swelled gland depends upon the engorgement of the interstices with the serous and fibrous portions of the blood. The blush of inflammation is well marked, and the throbbing quite sensible. Shiverings reveal the fact that the general system is influenced by the local inflammation. This shivering is succeeded by heat and copious perspiration. As the disease progresses the cuticle separates, ulceration is established in the cutis, and a discharge follows. This process is completed in from one to three weeks—the disease running its course much more rapidly in some than in others. This kind of inflammation mostly attacks young mothers, and for obvious reasons. When we endeavor to arrest the first stage, we shall not often be compelled to treat the suppurative stage. Fomentations, and washings with cool lotions, will be found of great benefit, and a poultice, in which there has been incorporated a large quantity of Veratrin, will be serviceable. Or, if the suppurative stage has been reached, then we must rely upon hop and poppy fomentations, and hyoscyamus poultices. The abscesses of the ulcerative stage are to be opened with the lancet, as soon as there is much evidence of accumulated matter, and

then the part is to be treated with poultices and fomentations—the minutia of which will be noticed hereafter.

1081. The limited space at my command, compels me to abbreviate what I have to say in relation to the diseases of the breasts, to say nothing of those minor affections which frequently require medical or surgical interference. The acute inflammations which are to be observed occasionally attacking the breasts, does not differ very materially from the same forms of inflammation when observed elsewhere, and if there be a difference, it is easily understood to result from the peculiar anatomical structure of the mammary gland. It is to be remarked, however, that the intimate relations which exist between the breasts and the uterus, and between the uterus and the great nervous centers, may occasion by reflex or secondary actions, peculiar hysterical or nervous phenomena, which do not attend the acute inflammation of other localities. The acute sufferings attendant on inflammation of this gland arise from its peculiar sensitiveness; its perfect nervous connections, and in the treatment of common acute inflammation of the gland, we shall be compelled to induce an obtuseness of the nervous centers, as far as possible, to blunt the sensory ganglia.

1082. From peculiarity of structure, there is a great tendency to the confinement of the inflammation to a particular spot, where we soon observe that the inflammation has passed through its adhesive stage, and has become hard, shining, and marked by a throbbing sensation, which may be regarded as more or less characteristic of the suppurative process. The general system has already partaken of the disturbance, and we witness the occurrence of tremors, shiverings, heat, and dryness of the cuticular surface, and, finally, profuse perspiration. Soon after, the cuticle separates, or splits into rugous cracks, and ulceration is at once established, the matter being discharged through the apertures or cracks in the cuticle.

1083. In any particular case, unless by remedies we may arrest the progress of the disease, all these stages will have been accomplished in from two to three weeks. Individual peculiarities, arising from general irritability, the depth to which the abscess has

formed, etc., will lengthen or shorten each case, but usually all the stages are completed in the course of three weeks, and after this, the whole tendency of the disease is to malignancy. Inflammation of this kind results from various causes, some of the most palpable of which I shall notice. When the child is first put to the breasts, its suction-efforts tend to draw an extraordinary flow of blood in the direction of the nipple. This is the case only while the child draws before the milk begins to flow. All parts of the tissue thus become periodically injected by an unusual quantity of blood, which, not returning with equal facility, is left in the engorged tissues, where it becomes a source of irritation, and finally, consequently, of inflammation. Then, again, there is constant and violent exposure of the breasts to a cold air, after they had been snugly and warmly accommodated in the dress. At one moment, they are full, warm, and dry, and a few moments afterward, they are flaccid, cold and wet, favoring great irregularities in the circulation, and thus maintaining a ready impressibility to every source of irritation. The disastrous practice of nurses and midwives encouraging the use of stimulating drinks, and refusing the child the use of the breasts, before several days have elapsed, and when the callostrum corpuscles have become agglutinated, has given rise to many a mammary abscess, and no doubt the same practice has been to some extent encouraged by physicians.

1084. In treating the adhesive stage of this kind of inflammation, we should endeavor to equalize the general circulation, to move the bowels, stimulate the functions of the skin, by the free use of diaphoretics, and to brace the system by the free and judicious use of tonics, not forgetting the great value of warm fomentations to the breasts. The use of cathartics will often prove of great advantage by their revulsive efforts. If these means do not arrest the disease, and the second, or suppurative stage shall have been reached, then poultices of Poppy and Gelsemium should be applied, the breast being bathed in a decoction of Veratrum Viride, all of which should be tepid. The internal administration of the following pill, at the same time, will be found to be of great value :

R Gelsemin, gr. iii.
Podophyllin, gr. ii.
Sanguinarin, gr. i.
Scutellarin, gr. iv.

Make into six pills, and give one at morning, one at noon, and one at bed-time. If the bowels are already open, then omit the Podophyllin, and substitute in its place Quinine, iv. gr.

1085. In regard to the abscess which may have formed, let me here remark, that they ought to be opened in every instance, no matter whether they shall be deep or shallow. No possible harm can result to impede the cure, but, on the other hand, the use of an abscess-lanceet will greatly relieve the immediate sufferings of the patient, and enable us to inject a very weak solution of Sesqui-Carbonate of Potash, or of Muriated Tincture of Iron into the abscess, which will very greatly facilitate adhesion, granulation, and restoration of the organ. Of course every opening should be made where the fluctuation is most distinct. The neglect of these abscesses and endeavors to discuss them when once formed, is a prolific source of malignant mammary tumors. Sir Astley Cooper, in his excellent treatise on this subject, relates a case where an ordinary milk-abscess, which had been somewhat neglected, degenerated into a true fungoid excrescence of the whole gland, which finally destroyed the woman's life. After the abscess has been healed, if a peculiar hardness remain, as is often the case, then it should be an object to discuss such induration by the use of Iodine, etc.

1086. The child should not be allowed to suck the diseased breast, but the milk should be regularly drawn by a glass tube prepared for the purpose; or else by the use of the breast-pump. The breast ought not to be squeezed or roughly used, as every physician of much experience has seen a greater or less number of mammary ulcers which have arisen from such improper manipulation of the breasts. Abscesses of the mammary glands often arise from cracks and fissures on the nipple, rendering it unpleasant to have the child put to the breasts, and hence they are allowed to become engorged with milk, which soon produces

irritation and inflammation. This is particularly apt to be the case when one breast is sore, and both the mother and physician should be guarded against allowing the milk to accumulate in the breast over and above the ordinary quantity, since the incidental distention would greatly favor, or give rise to inflammation—which, in every instance, is to be regarded as a symptom of a pathological state, requiring close and circumspect attention.

1087. Incidental to chronic inflammation, there is another abscess which requires the most careful inspection, and as it is long in forming, it has been denominated the chronic abscess. It is distinguished from acute abscess, by the length of time in which it is forming, by the little pain accompanying it, absence of heat and redness on the breast, and the want of rigors and those other constitutional disturbances which have been mentioned as being characteristic in acute abscess. For these reasons we are not led to suspect the formation of matter, and thus a malignant tumor is suffered to arise and progress with its ravages, which, had the nature of the disease been clear from the first, would have been averted. Upon pressure over such abscesses, the patient is very sensitive, and if we examine closely, the presence of matter will be detected by fluctuation. Let it be borne in mind that there is always more or less induration around the matter so formed, and hence we are liable to suppose that there is a tumor requiring excision. Sir Astley Cooper reports several cases which had been sent to him of this nature, and which had deceived those who sent them. In lancing such abscesses, or any others, the lancet should be put in so as not to cut the lactiferous tubes across—in other words, the blade should be put in parallel to the nipple, as the tubes run from the base towards the apex of the gland. It has been customary to give mercurials in this abscess, to alter the secretions; but it seems to me that no practice could be more injudicious. That Stillingia, combined with some of the more positive tonics are indicated, I do not deny; but generally, a due attention to the functions of the kidneys, skin, liver, stomach, and the diet are all-sufficient, along with opening the abscess, to effect a cure. If, after the abscess has been opened, sinuses form that refuse to heal, then stimulating injections are

indicated, in order to produce that inflammation which the tissues were unable to set up.

1088. There is another abscess of the breasts which seems to me to warrant some attention. I refer to what Sir Astley Cooper calls the Lactiferous Swelling, which is nothing more nor less than a lactiferous aneurism—the excessive enlargement of a single milk tube. To enable the practitioner to recognize it at once, I beg to briefly describe it. The swelling is like a ridge running from the nipple toward the base of the gland. The woman complains of a feeling of great distention, which is almost insupportable, when the child attempts to suck, owing to the increased flow of milk in the adjoining tubes. The breast is uncolored, but the cutaneous veins are greatly distended, while the fluctuation in the tumor is most distinct.

1089. When opened, little or nothing than milk is discharged, and if the opening is suffered to be closed, the tube is again soon similarly distended. If not opened by the surgeon, ulceration occurs, and an opening follows near the nipple, which can hardly be healed until the child has ceased to suck, and until milk is no longer secreted. The requisite treatment is apparent—puncture the tumor, and keep the child from the breast until milk is no longer secreted. Or if the child be yet very young, and it be desirable to retain the activity of both glands, open the abscess, making a free incision, and then inject a stimulating solution, so as to induce inflammation, during the progress of which, the breast may be artificially relieved of its milk, until adhesion has been completed. With all justice, this disease might be called Mammary Ranula, which it resembles in every respect, except that the one is produced by an accumulation of saliva, and the other of milk.

1090. There are four kinds of watery tumors of the mammary glands. The first of these are mere sacs filled with serous fluid, and named by Sir Astley Cooper Cellulose Hydatids. This variety is distinguished by freedom from pain, enlargement of the breast, no fluctuation at first, but which finally appears; the breasts then grow more rapidly, and fluctuation can soon be detected in a number of places at one time; the cutaneous veins are varicose,

and the breasts though many pounds heavier than usual—perhaps three or four times as large as common—are still free from pain; but a few patients complain of heat, and sometimes pain in the shoulder. The tumor moves easily on the pectoral surface, and is at the same time very pendulous. It may involve a part or the whole of the mammary gland.

1091. In its progress at one of the points of fluctuation, the breast inflames, ulcerates and opens, when a glairy mucilaginous fluid, mixed with serum, is discharged. Other sacs, if there be more than one, go through the same process, forming sinuses, which do not readily heal. The general health may be, and mostly is, good; nor do the adjacent structures seem to partake of the disease. The disease may progress, until so much fibrous structure has been formed, that the breast becomes one great tumor, which fills the patient and her friends with the apprehension of cancer. These larger sacs contain smaller ones, and these again, yet smaller ones, giving the idea of cellular dropsey. They vary in size, of from one-twentieth to half an inch in diameter, and rarely to one inch. The sacs are larger. The cysts are exceedingly vascular, the veins are engorged, and in operations bleed profusely, which disposition is manifested even after the tumor has been extirpated. There is no danger of confounding it with either of the abscesses already described, and when the sac is opened, the surgeon is at once led to a knowledge of the complaint. Sometimes a true scirrhus tubercle will have hydatids associated, but then we shall find that there are also present those darting pains, excessive hardness, etc., characteristic of scirrhus. For the treatment of this complaint, there is required only a simple dissection of the sacs and the immediately surrounding indurations, which usually effects a radical cure, with little or no further treatment, than a genial diet. Though the disease is not generally painful, there are some cases in which much uneasiness is felt from the first, as has been noticed by Cooper and others. These cases, however, seem to be exceptions, and may generally be accounted for by idiosyncrasy, etc.

1092. The second form of hydatid disease is marked by the following peculiarities: the breast is enlarged; hardened by fibri-

nous effusion; there are distributed through it various sacs containing serum, which fluctuate; from the inner wall of the sacs hang a number of polypous bodies which seem to float in the fluid contained in the sacs; many of these bodies are detached and floating loosely in the serum of the sacs; they vary in size, the largest not larger than small beans; generally, they are ovoid, and when opened, are found to be composed of many lamina, as in the layers of an onion, and which readily separate. This form is also characterized by the absence of pain. The best description and plates of this form of disease is found in Cooper's work on the Breasts. When the disease has advanced, so as to require treatment, that will have to be surgical, the breast must be removed, inasmuch as the great mass of the gland is diseased.

1093. The third species of hydatid disease of the breast, is that which has been called animal or globular. This form consists essentially of sacs filled with similar, but smaller sacs, filled with fluid, having no vascular connection with the surrounding parts. These hydatids are not confined to the breasts, but are often found in the liver, in the lower part of the abdomen, in ovarian tumors, lungs, the brain, around the heart, etc. The hydatid is contained in a cyst, which is surrounded by a fibrinous effusion, the result of inflammation. This fibrinous matter is highly vascular, but the hydatids are not immediately connected therewith. Cooper describes these cysts as a "semi-diaphanous bag, filled by a clear water, and it is uniformly smooth on the inner surface." Having no opening or inlet, it is nourished by absorption through the walls of the cysts. They are self-propagating, for if we collect the fluid of a sac, we shall find it filled with miniature hydatids. They are animalcules, having a separate and independent existence, and propagate on their interior surface their own species. They are sometimes found on the abdominal viscera with a mouth and tail added, and then receive their food through the mouth like other animals. Sir Astley Cooper regards them as the true link between the vegetable and animal kingdom. It is supposed to have been deposited wherever found, from the blood, and acting as a foreign body, is soon inclosed by the adhesive process.

1094. The proper treatment is to make an incision into the hydatid tumor, discharge the contents of the cysts, and then it readily heals, and, if the fluid should accumulate, a seaton may be passed through it, so as to set up sloughing. Perhaps it would be safer and more economical to inject the cyst, as soon as evacuated, with a solution of Sesqui-Carbonate of Potash, and thus insure a radical cure. The fourth form of Mammary Hydatids will be described further on.

1095. There is a tumor resulting from uterine sympathy, mostly found in females from seventeen to forty years of age, which is denominated Chronic Mammary Tumor. It is mostly found in single or barren women. It usually springs from the surface of the breast, and is therefore superficial and very movable; it is of slow growth, painless, generally, though sometimes gives rise to a sensation of rheumatic pain in the shoulder; it is commonly more tender just prior to the recurrence of the monthly flow of the menses.

1096. These tumors seldom acquire a weight of more than four or five ounces, though they have been found weighing as much as one pound. They will exist for many years, then disappear altogether, and, therefore, are in no sense malignant. The tumor is of a conglomerate or lobular form, and the name of lobulated Mammary Tumor has been suggested by Cooper. Upon dissection one is led to think that the tumor is only an added number of lobules, without the lactiferous tubes. It differs from malignant tumors of the breasts by the youth of the patient, generally, by the absence of pain, by the good health of the patient, the slow progress, its superficial situation, its extreme mobility, and lastly, its lobular character, which is at once revealed to the sense of touch.

1097. The pressure of stays, blows, etc., encourage the development of the tumor, but the real cause is in the uterus. We shall, therefore, be at once led to the principles which are to govern us in the treatment of the disease. Every function must be encouraged to normal action. The digestion, secretion and excretions must be inquired into; but, above all, the state of the uterus must claim special consideration. To the breast, over the

seat of the tumor, an iodine ointment plaster should be worn, unless there be considerable inflammation, in which case it will be best to employ cooling lotions and poultices of hops and bitter herbs. We must, however, not expect to induce their absorption while the uterus is the seat of irritation, inflammation, or ulceration. The disease rarely requires an operation, and it will be our duty to make its character known to the patient, who is always alarmed as to the possibility of its terminating in cancer. Marriage is almost sure to cure it when it occurs in single women, and a due attention to the uterus in those who are married is all that is required. But if the patient is determined to have it removed, no operation is more simple and certain to effect a radical cure, no possible danger attends the operation in any way, either immediately or remotely.

1098. In certain specific inflammations of the breasts, Gelatine is effused, which becomes vascular from the surrounding parts. It resembles cartilage, and in it ossific matter, especially phosphate of lime is deposited. These tumors have been described as Cartilaginous and Ossific tumors. The pain attending these tumors is very severe, the skin is warmer than natural, the tumor is very hard, and more painful before than after menstruation. The treatment is extirpation, as affording the only relief.

1099. Adipose tumors are frequently formed in and on the mammary gland. These tumors may grow on the surface covered only by the skin, or they may be merely an enlargement of those fatty masses which occupy the interspaces between the lobules. They can not be discussed, and the better plan is to remove the tumor at once, which may be readily done. Scrofulous swellings of the breasts are sometimes presented to the surgeon, but they are rare, and require no special treatment.

1100. Sir Astley Cooper describes an irritable tumor of the breasts, cases of which I have seen myself in several instances, and it seldom or never occurs before puberty. When the complaint attacks the glandular structure, there is little or no swelling of the breasts, but one or more of the lobes become very tender to the touch, and when handled gives rise to pain, which does not subside for many hours. This pain affects the entire arm and shoulder,

and generally prevents the patient from lying on that side when in bed. It may also affect that side of the body more or less. There are alternate sensations of heat and cold in the breasts; the pain is neuralgic, darting here and there along the nervous tracts—the stomach sympathizes, vomiting ensues, the pain is more acute before menstruation, there is no sign of inflammation, and the skin retains its natural color. Both breasts may be affected, or only one, or even a part of either one. This pain may continue for months or years, and the plan of treatment must be constitutional. The breasts may be bathed in an infusion of Gelseminum, Poppy and Lobelia, while the Gelsemin or Veratrin are given internally.

1101. But occasionally these symptoms are associated with a tumor, clearly defined, which is exquisitely sensitive to the touch, and at intervals exceedingly painful, especially before menstruation. They vary in size, but do not usually become large. They may exist in this painful state for a great while, when the pain may cease, and the tumor finally disappear. The treatment must be constitutional—and so ordered as to lessen the nervous irritability of the patient. An operation is by no means admissible, for the extraction of a tumor does not effect a cure; and more than one case has occurred where this has been clearly proven. I once, in my earlier practice, committed this mistake, and have known of similar errors in others. The mistake is a sad one, and we can not exercise too much care in diagnosing this as well as other similar affections of the breast. The space at my command prevents a further consideration of those minor affections of the breasts, and I shall, therefore, close this article by presenting briefly some views of cancer of the breasts, in which the profession and the public are more immediately interested, as the disease in all its forms is a source of great dread, and generally too often fatal in its effects.

1102. Carcinomatous or cancerous degeneration of the mammary glands has thus far baffled the skill of the medical profession. It is true that here and there we sometimes hear of a surgeon who has had much success in the treatment of Cancer, but until recently, as the disease, exist where it might,

was considered incurable, it was thought disreputable to adapt its treatment as a specialty, and hence, too many physicians have neglected its proper study. For sixteen years I have made this form of disease a special study, while I have not neglected my general surgical and medical practice, and I have constantly endeavored to teach the classes before whom I have lectured for the past ten years, all that I knew in relation thereto; I neither have, nor do I desire to make any secret of my knowledge in relation to the treatment of cancer, and I therefore repudiate the idea of being merely a "Cancer Doctor." I regard cancer as any other disease—one phase of the pathological states of man, and of which every physician should be informed. It would be just as unphilosophical to cease our endeavors to understand the nature of vomito, because we can not always cure it, as to neglect the study of cancer, because the profession has acknowledged its inability to cure it. Such an admission is a disgrace, since we know that in various parts of Europe and America, there are practitioners who *do* cure cancer in all its forms, and what one can do another ought to try. I have treated several hundred cases from all parts of the country, and while I have sometimes failed to effect cures, especially in the early years of my practice, I am proud to say that I have relieved, radically, hundreds who will sustain this declaration. There are few surgeons in America who have had so extensive a practice in the treatment of carcinomatous disease as myself, and therefore, few, if any, in this country, have had more experience than myself. If I shall be instrumental in fixing the attention of the profession to the importance of this subject, I shall have been amply satisfied for the trouble of preparing this paper. While I have hundreds of cases that might be detailed, my space is so circumscribed, that I shall be compelled to confine my remarks mostly to general principles.

1103. Carcinomatous tumors differ from every tissue found in the body, which, after proper development, gives rise to an ulcer, which in its extension destroys the surrounding parts. There is no difficulty in identifying carcinoma, since all the varieties depend upon constitutional peculiarities, the tissues

which surround it, the stage of the disorder, etc. The anatomical revelations of cancer are so peculiar and distinct from all other tissues, remove every doubt as to its character.

1104. There are five prominent forms of cancer of the breasts: Lobular carcinoma, intra-glandular carcinoma, encysted carcinoma, carcinoma of the nipple, and cutaneous carcinoma.

1105. When carcinoma first begins to develop, one form is characterized by a stony hardness, to which the name carcinoma fibrosum is given; but when the tumor is soft, imparting an elastic sensation, it is called carcinoma medullare, and all other forms are, at most, only varieties of these two.

1106. In every case, the tumor will have acquired some size before its presence is detected. When examined, the tumor feels hard, or it will be perfectly movable beneath the skin. At this time it gives no pain, was accidentally discovered; the health is good; but after a few weeks, the lump has grown, lancinating pains are felt, and if the adipose tissues are thin, the skin is seen to be elevated by the tumor. It is still hard to the touch, and gives a sensation of roughness to the touch. If the growth shall now be removed, it will have a greyish-yellow tint, having a sort of peduncle by which it was connected to the tissue of the gland. Fibrous lines, radiating from the tubercle, extend between the subcutaneous adipose tissue toward the skin—the tubercle itself looking speckled in the center, owing to the remains of the ducts of the engorged gland tissue.

1107. After a few more weeks or months, the gland, when again examined, will be found to have enlarged, it is more painful, and now adheres to the cutis, which, as Birkett says, may be "slightly puckered in."

1108. The adipose tissue covering it has now been mostly absorbed, and the attachment between the tumor and skin is so perfect that one readily moves the other. On either side of the tumor the skin is much thicker than usual. Unless the tumor shall be removed, the skin becomes harder, and, finally, the whole gland has disappeared, to give place to the tumor. The surface of the breasts is hard and rough, while the skin looks as though it was ready to burst from its extreme tension. It is reddish,

shining, and looks as though it were very sensitive, which, strange to say, is not always so.

1109. Another stage of development is soon established; the integuments begin to slough away, and an ulcer is at once established. Before this ulcer has been completely formed, small cutaneous eminences appear, the center of which decays, and is thrown off, leaving a little hole, which continues to enlarge, until it unites with others, and a large sloughing ulcer is formed. Or the ulcer may form by scaly cracks from which an oozing takes place, and these cracks uniting, result in a foul ulcer. Sometimes the development seems to be suddenly arrested, but such an occurrence is at all times an unfavorable circumstance, since the disease is at work on new tissues, and suddenly we find every symptom greatly aggravated.

1110. Soon after the attachment of the skin to the tumor, the axillary glands become affected; prickling of the skin in that region increases; œdema of the arm follows; and great pain is felt from any motion involving the action of the thoracic muscles, as in breathing, which is often very painful. A dull leaden hue characterizes the aspect of the patient; the countenance is uneasy and depressed; the strength fails; the scent nauseates her; she has pain in the bowels, and the patient sinks under her multiplied maladies.

1111. Carcinoma is rarely developed in the mammary gland before the age of twenty-eight, though it is sometimes found as soon as the establishment of the function of menstruation, and some few cases are reported where it occurred in children. From 28 to 50 years it is very common. It is sometimes found in women who have attained the age of 90 years. It may attack married or single women, those who are prolific or those who are sterile. Celibacy seems to favor the disease, notwithstanding the figures of Dr. Lever to the contrary. For while the percentage in married is to its percentage in single women, as 85 to 6, we must remember that the percentage of married to single women is even greater.

1112. There is, evidently, a cancerous cachexia, but it is very difficult to describe it. It may be known only by experience, in

which it will be observed that such women are those who are impressible to misfortune, and who have had much real or imaginary trouble.

1113. Those who have a strumous diathesis are most subject to cacoplastic deposits, but to point out any signs which would enable us to say that any woman was liable to or free from the horrors of carcinomatous disease, is out of the question, in our present state of knowledge. Cancer is a local manifestation of a constitutional dyscrasia, and we shall generally find, along with the earliest manifestations of the disease, defective nutrition.

1114. To be better enabled to comprehend the disease, its development has been divided into stages, which, however, answers the purposes of convenience only inasmuch as the whole process is a degeneration from the outset, and the constant tendency is to a fatal termination. At first the tumor is found small and rolling like a stone under the integuments, and is generally situated on the peripheral extremity of a lobe. This new growth may be attached to the surface of the gland, between it and the integuments, and under or in the subcutaneous adipose tissue. In this event, it is called extra-glandular; or when it rises, as it sometimes does, from the very center of the gland, it is called intra-glandular. In that event, it is situated immediately behind the nipple and areola. When it becomes attached to the skin, it is said to have passed into the second stage. The adipose tissue has been displaced, the tumor extends right and left, and greedily contaminates the surrounding parts. When the cutis begins to thicken, grow red and glossy, the third stage is said to have been reached. When the tumor becomes attached to the thoracic walls, it is said to have entered on the fourth stage. In the first of these stages the patient complains of no pain, and this is so true, that she admits considerable manipulation without the manifestation of any uncommon sensitiveness. When it happens to be in contact with the minute branches of the inter-costal nerves, it is more painful. The pain is of the lancinating kind, and is not confined to the gland. The pain, no doubt, arises from stretching the nervous filaments, and hence the pain is often referred to the sentient extremities of the nerve whose trunk had been thus

stretched. While the pain in some cases is not intolerable, in other instances it is excruciatingly severe. The external characteristics do not become clear until the third stage has been reached, when an oozing takes place from the cuticular surface, which, drying, forms a scab; in others, a fissure in the skin appears, which at first may, or may not, be attended with redness. At last, however, a redness surrounds the scab or fissure, as the case may be, the discharge is more copious, and soon the surface begins to excoriate, which is evidently a result of carcinomatous contamination.

1115. The fourth stage is that of necrosis, more particularly. Development does not cease here; but the earlier developments die, and fall off. As now seen, the ulcer is a frightful, a gaping, and eroded sore, the edges of which are elevated, with deeply excavated, and irregular surfaces, from which there is poured out a most offensive ichor, which is the debris of the decomposed carcinomatous tissue, mixed with serum, serous fluid, and blood. The nipple is often depressed, a circumstance which may arise from the elevation of the surrounding skin, or from the tension made on the tubes attached to it by the growth behind it.

1116. It would be desirable to determine, if possible, the probable duration of the disease, but such an attempt would be futile. Sometimes death will take place in four months; again, it may last many years; but, from my experience, I should be led to say that the disease will run its course in three years, on an average. There is a fact connected with the second stage of carcinomatous growths of the breasts to which I must make some allusion. I refer to the implication of the axillary lymphatic glands, which actually undergo an organic change, and while I do not profess an ability to give a rational explanation of the circumstance, I must nevertheless remark, that I think the fact is an index to the constitutional management of the disease. The constitutional effects of these various stages must claim our attention briefly. Generally, when the tumor appears about the "change of life," we shall be apt to learn that some common malaise has been experienced. The patient does not begin to feel ill until the second and third stages have been established. Her sleep will

then be disturbed, she is duller than in ordinary health; she has nausea in the morning, and usually constipation all the time. All these symptoms are intensely aggravated during the fourth stage. The arm of the affected side swells, becomes oedematous, and painful on slight motion; the breathing is difficult and the patient is often constantly sick at the stomach. Racking pains are felt in the bones, jaundice supervenes, and great constipation is often experienced.

1117. Of the treatment I shall be brief, for I have already occupied my allotted space. It is universally admitted that the mere removal of the tumor with a knife will not effect a radical cure. If a cure is to be effected in this way, it is when the tumor is in its first stage, and a large part of the sound tissues surrounding it have been removed therewith. It is evident that no operation of any kind should be attempted until the constitution is in the best possible state—not until every function is in a state of activity. The disease is both constitutional and local, and in its treatment our remedies must be both general and special. For this reason, when a patient comes to me for treatment it is my first care to put her on a properly nutritious diet; to regulate the functions of the skin, liver, kidneys, etc., to effect which objects, of course a variety of remedial agents are to be employed. Comp. Syrup of Stillingia, Iodide of Potassium, and Prussiate of Iron are usually given, along with such other agents as may seem to be indicated, as narcotics in extreme irritability, stimulants in great depression, etc.; particularly should we look to the digestive functions, and when we have removed the anemic habit of the patient, she is then ready for an operation. For the sake of economy the patient is put under the influence of chloroform, and the entire diseased mass is at once removed with the knife, after which I usually cover the surface with some tonic escharotic, as Chloride of Zinc, which seems to act more rapidly and greedily on the carcinomatous tissue. This is followed by poultices to slough the surface; and again, time after time, while a visible shred of the diseased tissue remains, this plan is followed, during which time the system is toned up to the highest pitch, and the functions are all closely watched. In this way, by the union of constitutional

and local treatment, if the constitutional stamina is good, we shall often, nay, if we proceed judiciously, nearly always effect a cure. Nor is the cure temporary, as can be demonstrated by cases now in this city, whom I discharged ten or twelve years since. As every case will differ from the common type, we shall be compelled to vary our plan of treatment. What I have thus written I know by experience, and I ask that attention to the subject which its great importance demands. The practice here given has been pursued by many who have witnessed my operations and attended my clinic lectures, and I am proud to say with great success.

TREATMENT OF DISEASES OF THE BREAST.

Acute Inflammation.—Among the troubles of child-bearing there are none that are more annoying than diseases of the breast, and none, I am glad to say, more amenable to treatment. An early knowledge of the trouble, and prompt means for its relief, become necessary if we expect the greatest success, and the physician fails to do his duty that allows disease to progress without notice and treatment.

It is especially to be observed that all rubbings of the breast, either before or after delivery, with the crude idea of "softening it," or "toughening it," are to be avoided. The application of Pond's Ext. of Hamamelis to the nipple and areola is permissible, and may sometimes be beneficial in lessening the irritability of the nipple; and the application to the breast may sometimes relieve irritation and lessen sensitiveness. But if consulted about sensitive breasts before delivery, we can not do better than to prescribe small doses of Phytolacca, and if necessary make a local application of the same.

"Milk fever" is sometimes attended with irritation, fullness and engorgement of the breasts—"caking"—which may go on to inflammation. The administration of—R Tinct. Aconite, gtt. v; Tinct. Phytolacca, gtt. xx; Water, ʒiv., a teaspoonful every hour, will usually give prompt relief. In some cases the severe after-pains call for Macrotyls, and it may be added to the mixture.

Proper support, with sufficient freedom, should be looked to,

and the ordinary corset with whale-bones making pressure upon, or sticking into the breast, avoided. It is possible to have an underwaist cut so as to fit the chest and the breasts, and give this support, and this should be named to the mother. It may also be made of such material as will give the required warmth.

With the first announcement of the symptoms of inflammation of the breast we put the patient upon the use of Phytolacca, either alone or with the sedative, Aconite, if there is vascular disturbance, Macrotyls if associated with uterine tenderness and pain, Bryonia if there is costal pain and soreness, Iris if there is fullness of the thyroid, and other remedies as they may be indicated. It will not do to say that Phytolacca will cure all cases of inflammation of the breasts. Without other indications than mammary irritation and determination of blood, it is sufficient, but other lesions require other remedies. If, for instance, the lochial discharge was fetid, we would want chlorate of potash; if the tongue was heavily coated and pallid, sulphite of soda, etc.

In the commencement of mammary inflammation, I frequently paint the affected part with tinct. Veratrum or Veratrum and Aconite. It may be used in the full strength or diluted with one or two parts of glycerine or water. It is better to limit the application to a space not larger than three inches in diameter, and the mother or nurse should be cautioned against letting the lotion come in contact with the nipple, or the child's mouth come in contact with that portion of the breast to which it has been applied. In other cases when the inflammation is not so active, we may use a lotion of equal parts of tinct. Phytolacca, glycerine and water; or when there is evident congestion a portion of tincture Belladonna may be added.

Fomentations and poultices are to be avoided in the early stage for without these we may reasonably expect resolution in a large number of cases, whilst if the breast is poulticed, suppuration is a common result. Even when suppuration is unavoidable, it is best to use poultices with caution, or avoid them altogether, for the less suppuration we have the better it will be for the breast and the mother. I have continued the Aconite and Veratrum to the extent of relieving the acute suffering, and Phytolacca in the interim, through the entire process of suppuration, until the breast had healed.

If we use a poultice, nothing will be better than a strong infusion of *Phytolacca* (the fresh root if it can be obtained), thickened with wheat bran. In place of this, a simple flax-seed poultice will prove as good as anything, or a couple of folds of lint wetted with warm water, and sprinkled with tincture of *Stramonium*.

With the appearance of pus near the surface, determined by yellow discoloration, or by fluctuation, or the deep throbbing pain when the pus is deep-seated, it is best to give it an exit with the lancet. The suffering of the mother at this time is very severe, local applications do no good, and if narcotics are given the general health must suffer. The patient dreads the knife, it is true, and we dislike to use it, but it gives prompt relief like pulling a tooth, and if the physician has experimented with the scalpel until he can make a rapid and skillful incision the pain is not so very great. But save me from your bungling doctor, who holds his knife unsteady, and saws through the tissues like an unskillful carver trying to find the joint of a fowl. If such a one should read this, I advise him to buy an old-fashioned spring lancet for his operation, and that will go quick.

The incision should always be made in the direction of the milk ducts—from the nipple to the circumference of the breast, and *never across them*. This may seem a trivial matter to the beginner, but it is a most serious one to the patient, for the cross incision may obliterate the milk ducts, and cause disease with each successive child.

If the inflammation progresses steadily, and the breast is very large and heavy, its weight may be sufficient to continue the disease, and occasion much suffering. I have already called attention to the necessity of support for the healthy breast; the diseased breast requires it still more. A handkerchief may be so arranged around the neck, in the form of a sling, as to give a very good support, but it is better obtained by having a piece of stout muslin cut to fit the breast. Even this may not be sufficient, and we use adhesive strapping, not only to give support, but to compress the enfeebled tissues. I have seen prompt relief given by the application of strips when the patient had formerly been suffering severely, and a termination by resolution or limited suppuration, when otherwise there would have been exten-

sive destruction of tissue. The reader will recollect the treatment of orchitis by strapping, and will use the adhesive plaster here in the same way and for the same purpose.

It must not be forgotten that when pus has formed and the abscess opened, we are not yet through with our case, nor the patient with her trouble. Other points of irritation, engorgement and inflammation may appear, and before the disease has run its course the breast may be honeycombed with fistulous pipes from small abscesses. I do not think this is likely with the treatment named, and when the breast is cared for, but is rather due to neglect and want of knowledge. See that the breast has constant support; use the local application named to any point of irritation that shows itself; give Phytolacca internally, and use such means as may be necessary to restore the general health, and we will have an end to the disease, and a good condition of the breast.

In some cases neither the abscesses nor fistulæ have any inclination to heal, and the breast remains in a very unpleasant condition. Here we must think of some local means that will free the breast from the diseased tissues, and stimulate the structures. At first I use a wet dressing of—R Salicylic Acid, Borax, aa. 3j. to 3ij; Water, Oj; and even wash the abscesses out with it if necessary. But if still more sluggish, with the debris of old tissues lining the abscess, there is nothing better than the injection of sesqui-carbonate of potash (saturated solution), followed by the dressing above named.

Chronic Inflammation.—Chronic inflammation is usually the result of the acute which has terminated in suppuration, as already described. If properly treated as above described, I do not think any inflammation will continue, though for some time there may be local indurations, and such adhesions may be formed as will cause trouble when the breast again comes into use. But if the old methods of poultices and frequent lancing is followed, we may not only have serious lesion of structure, but a condition of chronic inflammation continuing for years.

Even in this case I have great faith in Phytolacca as a remedy, and administer it internally and apply it locally. Of course it is not the only remedy, as we may find use for any of those we have studied, if we carefully observe the indications. The breast should

always have a well adjusted support, and be protected against sudden changes of temperature and other causes of irritation. In some cases strapping will answer a good purpose.

If there has been considerable deposit, the gland being greatly enlarged, and its circulation enfeebled, I would recommend the local application of the Uvedalia ointment, or one part of the tincture to four parts of water and Glycerine. The old Mayer's ointment proved an excellent application in some of these cases, and in some the ointment of iodide of lead was of service.

With fistulæ and the remains of old abscesses nothing is so good as the thorough injection of a saturated solution of sesqui-carbonate of potash, and a wet dressing of salicylic acid and borax.

Disease of the Nipple.—"Sore Nipples" are among the unpleasantnesses of child-bearing, and frequently give mother, nurse, and doctor a great deal of annoyance. This may be provided against in some cases, by care of the nipple and breasts the last weeks of pregnancy and when the child commences to nurse. The use of Pond's Hamamelis before confinement has been thought to harden the nipple, and prevent after trouble, but I prefer the lotion of borax and salicylic acid, or the tincture of Penthorum one part to glycerine and water five parts.

The first symptoms of soreness of the nipple, or soreness of the mouth of the child, should be met by the administration of Phyto-lacca to the mother in the one case, to the child and mother in the other. It is a little singular that the sore mouth of the child, shown by its crying when put to the breast, may be the very first intimation of the sore nipple which is sure to follow, and the physician will be surprised to find how wide the range of Phyto-lacca is in these cases, and how prompt and certain its action.

Insist that the child be nursed at proper intervals of two to three hours, and that the breasts be drawn alternately, and not allowed to be too greatly distended. If the nipple sinks in, and is difficult for the child to take hold of, use a good breast-pump to draw it out. But in all cases be sure that the nipple is properly dried after nursing, and covered with a fold of soft cloth when the breast is returned under the clothing.

If I was asked for the very best wash in these cases, I should answer, a lotion of borax, or borax and salicylic acid. I prescribe the first as follows: R Borax, gr. x; Glycerine, $\frac{3}{4}$ j., Rose Water,

ʒiij.. The second may be used in the proportions already named. A very good prescription in some cases is—℞ Chloral, ʒj; Glycerine, ʒj; Rose Water, ʒiij.; used as above. There are many prescriptions for this purpose, but my experience has shown that in a multitude of prescriptions there is *no* wisdom. Especially avoid all ointments or "salves," or anything containing fatty matter.

If there is local ulceration, or painful and suppurating fissures, nitric acid with the pine pencil may be used to advantage, associated with the other treatment. I do not like nitrate of silver.

But the remedy in a large majority of cases will be found in the *lead nipple shield*, which should be continually worn. It is easily made by beating out a piece of lead into a thin sheet, and then indenting it with a piece of wood formed to the size and shape of the nipple. It should be moulded so as to fit accurately, and the edges may be trimmed so that it will extend over the breast an inch from the nipple. Being thin the weight is no objection, and it protects the nipple and is at the same time the very best remedy for the ulceration.

Benign Growths.—The difficulties of diagnosis have already been named, and the fact that many benign growths are mistaken for cancer, and the breast removed in consequence. If the reader will bear in mind that the malignant or cancerous growth appropriates the tissues of a part to its own use; that it is in fact a *degeneration* of the tissue; and that the benign growth is always distinct from the natural tissues, an outgrowth from them, and never appropriated by them; we will have the best grounds for a correct diagnosis. If we can determine that a tumor is separate from the glandular structure, movable on the wall of the chest, and that the skin moves freely over it, we have reason to believe that it is benign. This is strengthened if the surface of the growth is smooth, it is of equal consistence, and it is free from pain, except that which comes from pressure or weight.

In some women, from the age of 35 to 50 the breasts are so freed from the earlier deposits of fat, that the glandular structure is felt very distinctly, and when well developed it may seem like a nodulated growth, or a series of these growths. I have seen three cases of this kind in which women were frightened by the thought that they had cancer. In one case it was diagnosed as cancer by two physicians.

Having determined that our patient has a benign growth, the next question is as to its treatment. Local applications to the surface are absolutely of no use, and neither is internal treatment. If the tumor has a very slow growth, and does not give much annoyance by pressure, we let it alone. But if it is decided to remove it, we have a very simple operation. An incision is carefully carried down to the growth where it can best be reached, not dividing the milk ducts if possible to avoid it, and the growth then enucleated with the handle of the scalpel or with the finger. When the growth has a fibrous capsule and fluid contents, a careless incision may cut through the capsule, discharging the contents, and make the operation a failure.

If it is a simple growth, we may bring the parts together and have it heal by first intention; but if we have reason to believe it is a recurrent fibroid, we are careful to remove the base from which the growth sprang, and leaving the wound open heal it by suppuration. These operations about the breast are so simple that any one can perform them with safety, if he studies his case well.

Malignant Growths.—The evidence of malignancy is sometimes so clearly marked that no one can make a mistake; but at others it is very difficult to make a diagnosis. If the structure of the gland is very evidently being appropriated by the growth, it is cancer. This can almost always be determined when it comes to the surface, and we witness the gradual change in the skin. The peculiar pain is also characteristic—twitching, sticking, darting, crawling, always radiating from a common center to the circumference of the gland; the gradual agglutination and adhesion of parts, until finally the growth is fixed; its uneven surface, and unequal resistance to pressure; and finally the enlargement of the lymphatic glands of the axillæ, and the impairment of the general health—cancerous cachexia.

Having diagnosed our case as one of cancer, we wish to determine the best treatment. We have first to determine whether the growth shall be removed, or whether the treatment shall be palliative, and if it is decided to remove it, we wish to determine the best method.

We will decide to remove the cancerous growth when the mammary gland is freely movable on the chest, and when there is no,

or very little, engorgement of the axillary lymphatics. If the growth has formed an attachment to the pectoral muscles, it is an unpromising case, as it is when there is much disease of the lymphatic glands, and the unpleasant waxy sallowness of skin that marks the cancerous cachexia. Whether the cancer is open—suppurating—or still covered by the integument, makes little difference, but the more rapid its growth the more unfavorable the prognosis.

Having determined to remove it, we must next choose the method. If the growth is entirely free, not having formed attachments to the muscles below or the skin above, excision of the gland is decidedly preferable. If it has appropriated a portion of the skin, and is suppurating, we may still excise the breast, or we may remove it with chloride of zinc or arsenious acid. Having determined on excision of the breast as the better method, we explain to the friends that we select this because it is the speediest and least painful method, but that to prevent a return of the growth in the cicatrix, we heal it by suppuration, as an open wound, and do not bring flaps of skin over it for speedy union, as generally practiced. There seems to be an antagonism between the suppurative process and cancerous growth—the pus cells replacing the cancerous cells, so that this healing by suppuration becomes an important part of the treatment.

Any one who has the least nerve and moderate skill with the knife, can perform this operation. The breast is lifted with the hand, and a sweeping incision made around it, commencing next the axilla, and dividing the upper and interior part last, so that we may speedily take up the mammary arteries. The gland is dissected from the pectoral muscles, and we leave no engorged tissue if we can avoid it. It is hardly necessary to say, that any enlarged lymphatics in the axilla should be removed, for if they are left the disease is sure to re-appear in the cicatrix or the axilla. For the first day we use a simple water dressing, or add a small portion of borax and salicylic acid to it. Then we make our anti-septic dressing a little stronger, or in three or four days we may dress it with mild zinc ointment. Every day when it is dressed we examine the surface carefully to see if there are any large or discolored granulations, or any sensitive points. If we find either we sprinkle the surface with finely powdered sulphate of zinc, or

apply the chloride of zinc paste to the spots, and burn them down. Thus with careful attention we see the wound gradually close up by granulation, and at last a firm cicatrix is formed.

Chloride of zinc is the escharotic in common use by Eclectic physicians, and may be so applied as to destroy the growth and effect a cure. I should prefer to use it in epithelial cancer, or when the growth being near the surface, had involved the skin, and when it was still of moderate size. Our object here should be a *rapid* destruction of the diseased tissues, for not only is the application very painful, but it excites inflammation of adjacent tissues, and if we are timid in making the application, the excitement caused by it may cause the cancer to grow more rapidly than we destroy it. I prefer a paste made of—R Chloride of Zinc (crystals), Powd. Gum Arabic, aa 3ss.; Powd. Sanguinaria, 3j.; rub it up in a mortar, and add water until it forms a paste. This is spread on plaster leather a fourth of an inch thick, and applied to the growth, pressing it into every interstice, if it is an open cancer. The recommendation to push it as rapidly as possible answers all questions as to the frequency of application, and we only stop when we are sure of the entire destruction of the growth.

If the pain becomes unbearable, the patient may be put under the influence of chloroform, or we may use chloral internally, or a hypodermic injection of morphia.

When we are satisfied the growth is removed, we endeavor to heal the wound by suppuration. A dressing of a solution of borax and salicylic acid, or of hydrate of chloral, 3j. to water 0j., or of the mild zinc ointment, will usually serve our purpose well.

Arsenic is said to give a painless cure, but this depends upon the strength in which it is used. The majority of the cancer recipes throughout the country contain arsenious acid as the active ingredient, and they are sometimes sold to verdant doctors at a high price. There is no doubt that some of these are very good, as arsenic is one of the agents known to destroy these parasitic growths. I think its combination with iron is one of the best forms, and I will give directions for the preparation I have usually employed. Take of the hydrated sesqui-oxide of iron a sufficient quantity, throw it on a paper filter, and allow it to drain until the paste is of proper consistence. Then add lard one part to five of the iron, and we have the basis of our arsenical plaster.

If now we have time, the growth is slow, and not vascular, we may add of arsenious acid, $\frac{5}{ij}.$, to this iron ointment, $\frac{5}{iv}.$, and the application will be almost painless. But if it is necessary to destroy it more rapidly, we increase the proportion, until sometimes it is used one part to two or even equal parts.

The ointment is used freely, and crowded into the open sore, the dressing being made every day; gradually the growth loses vitality, becomes hard as if charred, and finally has so separated from the sound tissue that it can be lifted with the dressing forceps. Then with a pair of scissors clip the connective fibres, tissue, vessels, and nerves, that may hold it, and it can be removed "roots and all." It will be noticed that by this method the growth is desiccated, and hardened into a mass, whilst by chloride of zinc it was melted down, and passed off as a species of pus.

In this case it is best to heal the cavity by the dry process, instead of by suppuration as before, and to accomplish this we dust it at each dressing with a very finely powdered sulphate of iron.

The general treatment of the cancerous cachexia will vary in different cases, the rule being to give the remedy indicated. I have seen most excellent results from the administration of iodide of potassium, where the patient had the pallid, leaden-colored tongue, and the blue gums,—the morbid process seeming to be arrested for the time being, and the growth diminishing in size. So also I have seen good results from the Phytolacca, when there was a tendency to glandular engorgement, and from arsenic when there was epithelial disease. I have given Donovan's solution (in minute doses) with Phytolacca when there was engorgement and tenderness of the superficial cellular tissue. Rhus has given good results when there was great burning in the cancerous ulcer and an ichorous discharge.

Outside of the selection of these special remedies, we may use the Hydrastis, which has obtained quite a reputation with our Homœopathic brethren as a specific to the disease. Or in place of this the Gallium Aparine may be employed. Other than these we see that waste and excretion are free, and that digestion and blood-making are well performed. Among the tonics I will suggest the use of the syrup of the triple phosphate of quinia, strychnia, and iron, as especially useful in restoring innervation, at the same time that it improves the appetite and digestion.

As a local application to palliate the disease, relieve pain, and check the rapidity of growth, we have seen that carbolic acid was best for mucous membranes, and tannic acid for the disease of the skin and other parts. Still carbolic acid may sometimes be used in cancer of the breast, the strength varying from a saturated solution to one part to four of glycerine, or still more dilute. We use that strength which best relieves the pain, and checks growth.

Tannic acid is used in saturated solution, either in glycerine or water. It is very freely soluble, and it is our object to so thoroughly tan the tissues that growth will be next to impossible. If it acts kindly the pain will be mitigated, the discharge greatly lessened, and the engorged tissues will be depleted of their fluids.

Other than this, a saturated solution of borax and salicylic acid may be used as a dressing, or a solution of hydrate of chloral $\frac{3}{4}$ j. to water 0 j. These are both good dressings, relieving pain and lessening or destroying the fetor of the discharges. I do not like permanganate of potash so well, but it may sometimes be used with advantage.

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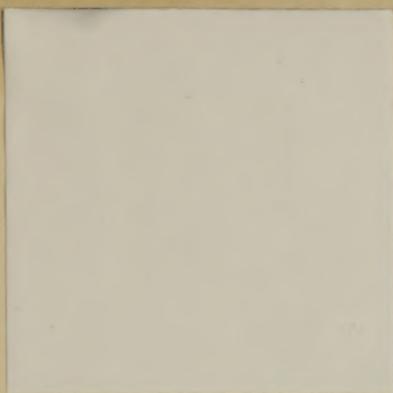
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